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# Land Condition Trend Analysis Avian Database: Ecological Guild-based Summaries

by

Eric R. Schreiber and William R. Whitworth

Common Name	Barred Owl
Scientific Name	<i>Strix varia</i>
LCTA Code	STVA
Alpha Code	BAOW
AOU#	3680
Neotropical Migrant Status	Resident
General Habitat	Forest, Swamp/Marsh
Nest Type	Cavity
Nest Location	Snag, Woody Upper Canopy
Food Type	Small Mammals, Birds
Foraging Technique	Low Patrol, Hover & Pounce



Land Condition Trend Analysis (LCTA) bird database documentation capabilities often are limited to generating installation-wide species checklists, estimates of relative abundance, and evidence of breeding activity. The conservation and characterization of biological diversity is becoming a management objective of both government and private organizations, and as such, more ecologically descriptive summaries are being required.

Ecological guild analyses have been proposed as a means to link wildlife to a specific biodiversity component, and thus represent an option to military trainers in evaluating impacts to wildlife communities.

This report documents an LCTA database update that provides selected ecological attributes (particularly for the nesting season) for 676 bird species occurring within the continental United States. This database upgrade provides land managers the capability to: (1) generate ecological guild-based summaries with no additional fieldwork, (2) identify specific groups of birds most likely to be impacted by a spatially discrete training impact, (3) customize the local database by adjusting individual attributes for species specific to the installation, and (4) conveniently cross reference or simply convert all LCTA species codes to more globally recognized American Ornithological Union "AOU numbers" or the Bird Banding Laboratories "Alpha codes."

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## Foreword

This study was conducted for the Office of the Directorate of Environmental Programs (ODEP), Assistant Chief of Staff for Installation Management (ACSIM) under Project 4A162720A896, "Environmental Quality Technology"; Work Unit EN-UD5, "LCTA Applications for Integrated Natural Resources Management and Environmental Compliance." The technical monitor was Dr. Victor E. Diersing, DAIM-ED-N.

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# 1 Introduction

## Background

The U.S. Army is responsible for managing 5 million hectares (12.4 million acres) of land on approximately 120 military installations throughout the United States (Tazik and Pierce 1994). As part of an integrated land management approach and under the sponsorship of the U.S. Army Engineering and Housing Support Center (USAEHSC), the U.S. Army Land Condition Trend Analysis (LCTA) program was developed at the U.S. Army Construction Engineering Research Laboratories (USACERL). The foundation of the LCTA program is the use of standardized methods to collect, analyze, and report natural resources data and is the Army's standard for land inventory and monitoring (Technical Note [TN] 420-74-3 1990). Approximately 50 major military training and testing installations in the United States and Germany have initiated or completed implementation of the LCTA program (Tazik et al. 1992).

In addition to providing sufficient training opportunities, land managers must consider a variety of multiple use demands and endangered species issues on a daily basis. For example, the conservation of biological diversity increasingly is a management goal for many state and federal agencies, including the Army, as outlined in section 11-1(c) of Army Regulation (AR) 200-3 (1995). Unfortunately, the funds to support research efforts under conservation of biological diversity an extremely broad subject area, will likely be difficult to obtain in the future, and installation staff must continue to do more with less. An economic alternative to obtaining new data is to maximize analyses done on existing data from past and current efforts.

Avian guild theory has been reported as a relatively simple option for evaluating impacts of a variety of military land use actions on an installation's avian community (Severinghaus 1981), and can be readily incorporated into a relational database such LCTA. Root (1967) was among the first to discuss the guild concept, defining guilds as "a group of species that exploit the same class of environmental resources in a similar way." A less restrictive definition is provided by Landres (1983), who defines a guild simply as "...a group of species that use a similar resource." An important premise in the guild concept is that wildlife species are associated with structures and/or spatial layers or zones



within habitats. Moreover, as more layers occur in a community, potentially more niches are included, and more wildlife species likely to occur (Short 1983). Assuming guild members are correctly identified, actions that affect environmental resources will similarly affect the members of the guilds using the resources.

Numerous avian guilds have been recognized or proposed; include groupings based on nesting substrate/location, feeding strategy, migratory tendency, and general nesting and feeding associations (Short 1983; Terres 1987; Peterjohn and Sauer 1993; Droege and Sauer 1989). Admittedly, the definition and application of guild theory is a point of debate among researchers, but the strong appeal of guild-based summaries is the ability to present plot data from a functional perspective rather than rely solely on species richness (plot, habitat, or installation-wide), similarity indices, and other traditional (numerical) measures of diversity. Moreover, associating species with specific environmental attributes or resources can aid in the risk assessment process. For instance, once the resource(s) to be affected by training activities is known, avian guilds (species) likely to be affected can be readily identified. Avian guilds are easily defined from LCTA survey data and can provide an understanding of how species assemblages change over time relative to a resource. Grouping of species has the added benefit of reducing bias associated with individual species detection rates while effectively increasing sample size and the power (beta) of statistical tests.

## Objectives

The primary objectives of this report are to:

1. Expand the utility of LCTA data by providing published ecological attributes for all bird species that occur in, or those that migrate through, the United States,
2. Describe common guild associations and provide documentation enabling installation natural resources personnel to adjust their LCTA database to reflect bird species characteristic of their installation and region, and
3. Allow the simple conversion of LCTA codes to the more universally recognized Bird Banding Laboratory Alpha codes and American Ornithologists' Union (AOU) numbers, and vice versa.

## Approach

Information for this database was derived from a variety of sources that included bird field guides (Peterson 1980, 1990), encyclopedias (Terres 1987), and field handbooks (American Ornithologists' Union 1983; Ehrlich, Dobkin, and Wheye 1988). Data quality checks were initiated after species-attribute information had been incorporated to ensure agreement among the various sources. A limited number of new species codes were developed by USACERL to represent species not recognized either by USACERL (Kowalski and Whitworth 1991), the Bird Banding Laboratory (Canadian Fish and Wildlife Service and the U.S. Fish and Wildlife Service 1991), or the American Ornithologists' Union (1983).

## Scope

This report describes an LCTA database update that provides selected ecological attributes of 676 bird species occurring within the continental United States. Ecological attributes for each species includes: neotropical status, nest location, nest type, food type, foraging substrate, foraging technique, and general habitat type.

## Mode of Technology Transfer

This report is intended to assist natural resources personnel in customizing and updating their LCTA bird database, thus permitting a greater range of potential analyses and facilitating the interpretation of their LCTA bird data. The database update may also be incorporated into future versions of the automated LCTA frontend program and linked to additional databases. This report represents one in a series of user-friendly reports documenting the utility, limitations, and potential applications of LCTA data (Price et al. 1995; Anderson et al. 1995; Rice, Demarais, and Hansen 1997; Anderson, Guertin, and Price 1996; Whitworth and Hill 1997).

An electronic database containing all guild information and the macro can be obtained from USACERL. For further information about the program, contact the authors at 1-800-USA-CERL, or write to USACERL, Attn: LL-N, P.O. Box

9005, Champaign, IL 61826-9005. Use of the macro requires Microsoft Excel 97\* or newer version.

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\* Citing manufacturer and software names is not intended to imply endorsement by the Department of Defense or the U.S. Army.

## 2 Using the Macro

After installing the file, open Microsoft® Excel and select <bird\_db.xls>. Refer to the appropriate Microsoft® Office 97 documentation for further details on enabling and using macros. See the Appendix for standard guild information.

Upon initializing the macro, a dialog box prompts you to <Overwrite existing output data?>. By answering <Yes>, any current data within the Output sheet will be lost. By answering <No>, additions and corrections will simply be appended to existing output data.

The second dialog box prompts you to <Enter code type (LCTA, ALPHA, AOU)>. These codes are based on either the Land Condition Trend Analysis (LCTA) program, the Bird Banding Laboratory (Alpha), or the American Ornithologist's Union (AOU).

The third dialog box prompts you to <Enter bird species code>. As you enter each code and press <RETURN>, data is pulled from the bird database and inserted into the Output sheet. Codes that are entered incorrectly, or those that do not correspond to a species within the database, will be flagged as **Code Not Found**. Do not worry about duplicate or invalid codes at this point; they will be corrected later. Press <RETURN> on an empty field when all applicable codes have been entered.

The fourth dialog box prompts you to <Enter sorting criteria>. Output data can be sorted according to LCTA code, ALPHA code, AOU number, common name, or scientific name. Duplicate codes are also removed at this point. You can delete rows that show **Code Not Found** by simply deleting the rows. You can remove these codes at any time.

The fifth dialog box then prompts you to <Save the data?>. By answering <Yes>, you can save the output to a specified directory or subdirectory. By answering <No>, new output data will not be saved. At this point, if you need to correct or verify certain codes, or add species, simply rerun the macro. The macro will then loop back to the initial dialog box and prompt to <Overwrite existing output data?>. If you are simply editing codes or adding new codes, answer <No>.

Continue rerunning the macro until all species have been included, and all errors identified and corrected.

Now, with the installation-specific guild summaries for each species, verify that all species that occur on the installation have in fact been included in the output file. When all verifications are completed, go back and modify the guild association characteristics for each species. Many species occupy various guilds in different parts of the country, so stated representations for every species may not be appropriate for your installation. Modifying guild characteristics to fit local conditions will make data analysis and interpretation more precise.

### 3 Survey Methodology

#### LCTA Bird Survey Overview

To place guild-based avian summaries in the proper context and define the limitations of the data, it is important to at least present a brief overview of field survey methods. For complete information on LCTA methodologies, refer to the U.S. Army Land Condition Trend Analysis (LCTA) Plot Inventory Field Methods Technical Report (Tazik et al. 1992). Bird surveys are conducted during the morning (0 to 4 hrs post sunrise) on a random subsample of all LCTA core plots by using a modified point-count technique. Under typical circumstances, the total number of core plots sampled is 60. Each plot is surveyed at least once. Initial implementation guidance suggested an evening survey be considered as well (Tazik et al. 1992). Table 1 identifies the three segments constituting a valid plot survey. Briefly, an observer(s) slowly walks the 100-m transect in 6 minutes and records all birds seen and heard within 100-m of the plot (Line Out). Upon reaching the end of the transect the observer stops and for 8 minutes records all birds seen and heard within 100-m (End Point). The observer then walks back to the starting point, again recording all birds seen and heard within 100-m of the plot (Line In). The maximum number of birds exhibiting breeding behavior are totaled by species (MAX Pair, Table 2). Mated status for each individual is described in Table 3. Species observed outside the plot boundaries, migrating overhead, and before/after the official survey times are also recorded on the standard LCTA Bird Survey Data Form (Table 2) within the "Others" column.

For each species, common name, LCTA species code, mated status, and total number of individuals are recorded within each segment of the survey (Table 2). Species documented within the "Others" column should only be used in installation checklists and should not be included in statistical analyses since they did not occur within the designated LCTA plot boundary. The "Others" category represents observations of species outside the plot boundaries, such as migratory birds and raptors, and includes those species observed while driving to and from plots.

Upon completing all bird surveys within a given field season, the data is then entered into a standardized electronic database. The format of the database has

recently been revised (Table 4) by researchers at USACERL to allow installation personnel the advantage of being able to sort individual occurrences (e.g., by mated status or measurement point).

**Table 1. LCTA measure point code with short description.**

Measure Point Code	Line Segment
LO	Line Out
EP	End Point
LI	Line In
C	All ages and genders of species outside the plot boundary were totaled and entered as one observation

**Table 2. Completed LCTA bird survey data form, USMA, West Point, NY.**

Installation West Point LCTA Plot Number 9 Observer T. Miller  
 Date 5/29/93 Starting time 1902 AM PM (circle one)  
 Cloud Cover (%) 10 Wind 10-15 Temp (C°) 16

Common Name	Species Code	Number of birds Observed Inside the Plot Limits				Max Pair
		Line Out (6 min)	End Point (8 min)	Line In (6 min)	Others*	
R.W. Blackbird	AGPH	1	1, 1F			2
Ovenbird	SEAU	1				1
E. Kingbird	TYTY	1				1
A. Robin	TUMI	1	1			2
N. Flicker	COAU	1U				0
Song Sparrow	MEME		1 Pr			1
R.S. Towhee	PIER			1		1
R.B. Woodpecker	MECA			1		1
N. Oriole	ICGA				1	0
R.B. Grosbeak	PHLU		1			1

\* This category includes species observed outside the plot limits, and flyovers of birds not using the plot.

Table 3. LCTA mated status code and description.

Mated Status Code	Mated Status
*	Singing Male
PR	Adult male/female
M	Nonsinging male
F	Female only
U	Unknown sex and age
Y	Young of the year
FL	Flock
C	All statuses were combined
NR	Not recorded

Table 4. Representative spreadsheet within the USACERL LCTA bird database.

Instalid	Plotid	Recdate	Vertid	Period	Num	Flyovers	Mated Status	Measure Point
WES	9	5/30/93	AGPH	AM	4	N	*	LO
WES	9	5/30/93	AISP	AM	1	N	*	EP
WES	9	5/30/93	BOLE	AM	1	N	*	EP
WES	9	5/30/93	BUJA	AM	1	N	U	LO
WES	9	5/30/93	COAU	AM	1	Y	*	C
WES	9	5/30/93	CYCR	AM	1	N	*	LO
WES	9	5/30/93	HYMU	AM	1	Y	*	C
WES	9	5/30/93	ICGA	AM	1	Y	*	C
WES	9	5/30/93	MECA	AM	1	Y	*	C
WES	9	5/30/93	MEGE	AM	1	N	*	EP
WES	9	5/30/93	MEME	AM	1	N	*	EP
WES	9	5/30/93	MNVA	AM	1	N	*	LO
WES	9	5/30/93	PHLU	AM	1	N	*	LO
WES	9	5/30/93	TYTY	AM	2	N	PR	EP
WES	9	5/30/93	VIFL	AM	1	N	*	LO
WES	9	5/30/93	VIOL	AM	1	N	*	LO
WES	9	5/29/93	AGPH	PM	1	N	*	LO
WES	9	5/29/93	AGPH	PM	1	N	*	EP
WES	9	5/29/93	AGPH	PM	1	N	F	EP
WES	9	5/29/93	COAU	PM	1	N	U	LO
WES	9	5/29/93	ICGA	PM	1	Y	*	C
WES	9	5/29/93	MECA	PM	1	N	*	LI
WES	9	5/29/93	MEME	PM	2	N	PR	EP
WES	9	5/29/93	PHLU	PM	1	N	*	EP
WES	9	5/29/93	PIER	PM	1	N	*	LI
WES	9	5/29/93	SEAU	PM	1	N	*	LO
WES	9	5/29/93	TUMI	PM	1	N	*	EP
WES	9	5/29/93	TUMI	PM	1	N	*	LO
WES	9	5/29/93	TYTY	PM	1	N	*	LO



## 4 Database Characteristics

### Vernacular and Scientific Names

Vernacular and scientific names were taken from the 1987 *Checklist of Vertebrates of the United States, the U.S. Territories, and Canada* (hereafter called *Checklist of Vertebrates*, Banks, McDiarmid, and Gardner 1987). The 1987 checklist includes a national list of standard vertebrate species names that is accurate and up-to-date, as of 1985. However, with the checklist being more than 10 years old, many scientific names may have changed. Also, depending on taxonomic characteristics, certain individuals and organizations lump species while splitting others. For example, the Northern Flicker is often recognized as one unique species by some researchers while others split it into two unique species: the Yellow-shafted Flicker and the Red-shafted Flicker. Refer to Table 5 for additional species that are frequently lumped or split.

Common names are entered in two different formats within the electronic database. The first series of common names is arranged with the last name followed by the first name (e.g., Blackbird, Red-winged). The second series of common names is arranged with the first name followed by the last name (e.g., Red-winged blackbird). Both formats were included within the electronic database so that individuals can opt for either one without having to retype each common name.

### Avian Codes

Three sets of organizational avian codes are included in the database to facilitate communication between various organizations and enable comparisons between data sets.

**Table 5. Species that are typically lumped or split.**

Northern Flicker	Yellow-shafted Flicker Red-shafted Flicker
Snow Goose	Blue Goose Snow Goose
Brant	Atlantic Brant Black Brant
Tricolored Blackbird	Tawny-shouldered Blackbird Yellow-shouldered Blackbird
Scott's Oriole	Black-vented Oriole Black-cowled Oriole
Northern Oriole	Baltimore Oriole Bullock's Oriole
Rosy Finch	Gray-crowned Rosy Finch Black Rosy Finch Black-capped Rosy Finch
Dark-eyed Junco	Slate-colored Junco Oregon Junco Gray-headed Junco White-winged Junco
Yellow-rumped Warbler	Myrtle Warbler Audubon's Warbler
Palm Warbler	Western Palm Warbler Yellow Palm Warbler
Tufted Titmouse	Eastern Titmouse Black-crested Titmouse
Bushtit	Common Bushtit Black-eared Bushtit

**LCTA Codes**

LCTA wildlife codes were established in 1991 by USACERL researchers (Kowalski and Whitworth 1991) and based on scientific names from the *Checklist of Vertebrates* (Banks, McDiarmid, and Gardner 1987). Each code consists of the first two letters of the genus and the first two letters of the specific epithet. To eliminate duplication, numerical values are added to similar four-letter codes (e.g., SICA1 and SICA2). However, a potential problem with using numerical values is that many observers find them difficult to remember and occasionally may enter the wrong one. Unfortunately, a code entered incorrectly may not

necessarily show up as an error. Therefore, it is desirable for a qualified field biologist to input and/or check plot data. For example, if an observer records an eastern wood pewee (COVI1) but fails to write the "1" on the suffix, the result is not a illegitimate code (with an error message) but represents another species, the northern bobwhite (COVI). In some areas both species can occur together, making this error more difficult to detect. This potential problem can be minimized by the use of experienced field personnel. Alternatively, an installation may want to consider using a more intuitive method such as the more widely accepted AOU Codes (American Ornithologists' Union 1983), converting back to LCTA codes when necessary.

### **Alpha Codes**

Alpha codes, developed by the Bird Banding Laboratory, consist of a four-letter combination composed of the common name (e.g., BAEA [Bald Eagle] and RWBL [Red-winged Blackbird]: Canadian Fish and Wildlife Service and U.S. Fish and Wildlife Service 1991). Potential problems include: (1) field biologists who devise individual or entire sets of alpha codes instead of following accepted guidelines or established codes, (2) species that do not have an alpha code (e.g., game species like quail, pheasant, turkey, etc.), and (3) common names that vary between different localities. Interestingly, 36 species included in the database did not have a designated alpha code. Therefore, to provide some consistency and completeness, USACERL developed codes for the 36 undesignated species, marking each with an asterisk (\*).

### **AOU Codes**

AOU codes, established by the American Ornithologists' Union in the late 1800s, are numerical codes consisting of four numbers (American Ornithologists' Union 1983). Since the AOU checklist is widely used as an official, or semi-official reference, little change in taxonomic concepts has been implemented, unless widely accepted based on published evidence.

## **Guild Associations**

Information within this section was derived primarily from the 1988 *Birder's Handbook* (Ehrlich, Dobkin, and Wheye 1988).

Many species can substitute or switch nest location, nest type, diet, foraging substrate, foraging technique, and habitat type; therefore, ecological guild-based attributes for some species may not be appropriate in every locality. Some

species are "specialists" and associate with a single guild, whereas other species are "generalists" and associate with multiple guilds. For example, a species may frequent multiple habitats, consume a variety of foods, construct a nest in a variety of locations, but builds only one type of nest. Depending on the species and geographic area, some guild data will likely have to be modified to fit local conditions. The appendix contains standard guild information.

### ***Neotropical Migrant Status***

The neotropical bird classification system listed below (Partners in Flight 1991) has been included in the database to help installation personnel become more familiar with migratory species. The 676 bird species that are currently listed in the database are divided as follows:

Class A - 141 species; Species that breed in North America and spend their nonbreeding period primarily south of the United States.

Class B - 71 species; Species that breed and winter extensively in North America, but some populations winter south of the United States.

Class C - 34 species; Species whose breeding range is primarily south of the U.S./Mexico border and enters the United States along the Rio Grande Valley.

Class D - 5 species; Species whose breeding range is restricted to the Florida Peninsula within the United States, and withdraws from Florida during the nonbreeding season.

Class R - 425 species; Species that breed and winter exclusively in the United States (resident species).

Class A and B neotropical migrant species are probably most vulnerable to habitat alterations since they spend their nonbreeding period south of the United States, and migrate across several environments to reach their breeding grounds. Class C and Class D neotropical migrant species are also important but typically breed south of the United States. Class R (resident species) do not migrate but are still being threatened by alteration and degradation of their habitats beyond the point of use by a particular species within the United States.

### ***Nest Location***

Nest locations have been generalized for most species; however, some specialized nest locations have been included for those species that will nest only in certain areas. Thirteen nest locations are described below:

Bank - Includes river banks, areas of soft soil on steep island slopes, etc., where nest burrows are excavated.

Cactus - Includes nests built in cholla and yucca trees.

Cave - Nest built within a cave.

Cliff - Includes nests situated in natural crevices or on ledges of cliffs typically offering a commanding view of a defensible position, and sometimes chosen when no suitable trees are available.

Floating - Includes nests floating on water and usually anchored to live emergent or submerged vegetation.

Ground - Includes nests placed among the roots, or in niches among the roots of fallen trees, among tules and reeds (in marshes), among grasses, on bare rock, or simply scraped in the dirt or sand.

MMS (Man-made Structure) - Includes nests placed among any man-made structure (bridges, barn, etc.).

Reed - Nest built within and attached to reeds.

Shrub - Includes nests placed within any multi-stemmed woody plant that does not have a distinct single trunk extending several feet between the ground and the lowest branching point.

Snag - Includes nests placed in a standing dead tree. Also used for species that use cavities in dead and live trees more/less indiscriminately.

Vine Tangle - Includes nests placed in vines, brambles, brush piles, etc.

Woody Lower Canopy - Includes nests placed in the lower canopy of deciduous or coniferous trees.

Woody Upper Canopy - Includes nests placed in the upper canopy of deciduous or coniferous trees.

### ***Nest Type***

Birds of the same species typically construct similar nests; however, the materials available often differ from area to area. Thirteen nest types are characterized below:

Abandoned - Nest is built in an abandoned nest previously built by another species.

Burrow - Eggs placed in a chamber at the end of a tunnel. Tunnels are either excavated by the bird (most kingfishers, puffins, storm petrels) or usurped from small mammals, especially ground squirrels and prairie dogs.

Cavity - Eggs placed in a cavity that has been either excavated (woodpeckers) or in a natural cavity found in a dead or dying tree. Sometimes a cup or other structure is built within.

Crevice - Eggs placed in a crack in the face of a cliff, between boulders, in a man-made structure, etc.

Cup - A sometimes bulky, but always deep depression, with a hemispherical inside and a rim height several times the diameter of the eggs.

None - No nest is constructed. Eggs are typically layed on ground with nothing to protect them.

Oven - Oven-shaped (roofed or arched) nest on the ground.

Parasitic - No nest is constructed. Eggs are deposited in the nest of another species.

Pendant - An elongate saclike nest suspended from a branch.

Platform - A structure in a tree, on a cliff, or providing a dry place above marshy ground or water, usually big enough for the bird to land on, with or without a distinct depression to hold the eggs. Typical of many raptors and wetland birds.

Saucer - A shallow cup with the height of the rim not more than twice the diameter of the eggs. Also a flattened nest of pliable vegetation as in some wetland birds.

Scrape - A simple depression usually with a rim sufficient to prevent eggs from rolling away. Those of many duck species are almost bowl-shaped. Occasionally with lining added.

Sphere - Globe-shaped or ball-shaped. A roughly round structure, fully enclosed except a small opening usually on the side or at one end.

### ***Food Type***

Diet is a category that is often difficult to quantify. Species rely on a variety of food types throughout the year and many species have an entirely different winter diet than that of the summer and spring. Therefore, inferences that follow need to be looked at as generalizations and will not represent the diet of a particular species in every geographic area within all seasons. Thirteen food items are listed below:

Aquatic Inverts - May include aquatic insects, crayfish, shrimp, snails, bivalves, etc.

Birds - Includes birds and their eggs.

Carrion - Dead and putrefying flesh.

Fish - Includes fish, their fry, and eggs.

Fruit - Includes fruit and berries.

Greens - May include leafy parts of both aquatic and terrestrial plants, and bulbs.

Insects - May include insects, spiders, mites, land snails, slugs, worms, millipedes, sowbugs, etc.

Nectar - The sugar-containing liquid secretion of the nectary of many flowers.

Nuts - A type of fruit with one seed and a hard woody outer layer (e.g., acorns and beechnuts).

Seeds - Includes grains, sunflower seeds, conifer seeds, etc.

Small Mammals - Any animal of the class Mammalia. Includes shrews, ground squirrels, rabbits, but most often rodents.

Small Verts - Includes reptiles (e.g., lizards, snakes) and amphibians (e.g., salamanders, frogs).

Tree Sap - A watery solution that circulates through a plant's vascular system.

### ***Foraging Substrate***

Foraging substrate has been included to aide in making larger scale generalizations with regard to feeding techniques. Five substrates have been identified:

Air - Foraging done in the air. (Includes foraging techniques such as: Aerial Foraging, Aerial Pursuit, Hawker, Hover & Pick, Hover Gleaner, and Piracy.)

Bark - Foraging done primarily on the bark of trees. (Includes: Bark Gleaner.)

Foliage - Foraging done primarily on foliage. (Includes: Foliage Browser and Foliage Gleaner.)

Ground - Foraging done primarily on the ground. (Includes: Digging, Ground Gleaner, High Patrol, Hover & Pounce, Low Patrol, Piracy, Scavenger and Swooper.)

Water - Foraging done primarily on or in the water. (Includes: Ambusher, Dabbler, High Dives, Prober, Skimmer, Surface Dips, and Surface Dives.)

### ***Foraging Technique***

Many birds that eat both seeds and insects will take proportionally more insects when available. Therefore, geographic area and availability of food items will have a major effect on items consumed. In addition, both primary and secondary foraging techniques may be used to obtain primary food items. Twenty-two foraging techniques have been identified:

Aerial Foraging - Capturing flying insects while in a prolonged, continuous flight.



Aerial Pursuit - Chasing or catching birds in midair, stooping (dropping on flying birds from above, killing them in midair with a blow from the talons), or snatching them from their perches.

Ambusher - Hunting by standing motionless on a bank or in the water and spearing fish, frogs, etc.

Bark Gleaner - Gleaning from tree trunks and branches. Includes excavating and drilling into bark.

Dabbler - Floating on the surface in shallow water, pivoting headfirst downward while raising hind-quarters above the water to reach submerged plants or animals on or near the substrate.

Digging - Includes scratching at the surface and digging for bulbs, insects, etc.

Foliage Browser - Browsing tender shoots, twigs, and leaves of trees and shrubs for food.

Foliage Gleaner - Gleaning from foliage and occasionally from branches. Take invertebrates and/or fruit from the vegetation, not from the ground surface.

Ground Gleaner - Picking up items from the surface of soil, turf, sand, etc.

Hawker - Sallies from perch on short flights to capture flying insects.

High Dives - Dropping from a height into the water, usually to catch fish, but sometimes to take waterfowl and other prey.

High Patrol - Soaring at high altitudes in search of carrion or prey.

Hover & Pick - Hovering above a particular substrate, then snatching or picking up the food item.

Hover & Pounce - Hovering before swooping or dropping down on prey.

Hover Gleaner - Taking nectar, insects, or berries from plants above the ground while hovering.

Low Patrol - Seeking prey in a low searching flight.

Piracy - Taking prey from another bird.

Scavenger - Feeding on carrion, refuse, or material left unconsumed by other organisms.

Skimmer - Flying low over the water and snatching up fish or aquatic invertebrates.

Surface Dips - Taking food from the water's surface or from just below while floating or swimming on the surface.

Surface Dives - Floating and then diving under water using feet and/or wings in search of prey.

Swooper - Snatching prey from the ground in talons after a gliding descent from perch with wings spread.

### ***General Habitat***

General habitat is another category that is often quite difficult to define. Many species frequent several habitat types and are not associated with just one. Therefore, general habitat classifications within the database should be viewed with caution. Fifteen habitat types are listed below:

Coastal - An area of land near the shore (Pacific and Atlantic Coast).

Cropland - Includes lands that have been planted with grain or sorghum, disked fields, or anything else pertaining to agricultural practices.

Desert - A terrestrial environment characterized by poor soil, climatic extremes of high and low temperatures, and low rainfall.

Forest - An extensive concentration of trees and related vegetation. Includes sparsely wooded areas, densely wooded areas, and pinon-juniper associations.

Forest Edge - The transitional area where a forest ends and another distinct habitat begins.

Freshwater - Includes areas such as lakes, ponds, rivers, and streams.

Grassland - An area of land on which the natural dominant plant forms are grasses and forbs. Areas with scattered trees and/or snags are included in this community type.

Pelagic - Living or occurring in the open sea for a substantial portion of their lives.

Riparian - An area located along the bank of a natural watercourse (as a river) or sometimes of a lake or tidewater.

Rocky Slope - An area abounding in or consisting primarily of rocks (mountains, cliffs, talus slopes, etc.).

Shoreline - The strip of land where a body of water and the shore meet.

Shrubland - An area of land on which the natural dominant plant forms are shrubs (a low, usually several-stemmed woody plant).

Swamp/Marsh - A wet, spongy land, saturated and sometimes partially or intermittently covered with water. Also includes tracts of soft, wet land, typically characterized with grasses and cattails.

Tundra - A treeless plain that is characteristic of arctic and subarctic regions, and consists of black mucky soil with a permanently frozen subsoil, and supports a dense growth of often conspicuously flowering dwarf herbs.

Urban - Any area habituated with people. Includes cities, towns, suburbs, and possibly farm houses, etc..

## 5 Summary

Information within this report will provide land managers the capability to: (1) generate ecological guild-based summaries with no additional fieldwork, (2) identify specific groups of birds most likely to be impacted by a spacially discrete training impact, (3) customize their database by adjusting individual attributes for species specific to their installation, and (4) conveniently cross reference, or simply convert, all LCTA species codes to more globally recognized American Ornithological Union "AOU numbers" or the Bird Banding Laboratory "Alpha codes".

The LCTA bird database provides selected ecological attributes of 676 species occurring within the continental United States. However, LCTA avian codes were based on the 1987 *Checklist of Vertebrates*, which encompasses 1,098 bird species, and covers a wider geographical area. Therefore, depending on installation locality, species range, and occurrence of infrequently observed species, additional species may need to be incorporated into your local database.

Each species within the database has information pertaining to neotropical status, nest location, nest type, diet, foraging substrate, foraging technique, and general habitat. However, since many species occupy various guilds in different parts of the country, stated representations for each species may not accurately portray the most applicable data. Therefore, after all codes have been entered into the avian macro, verified, and an installation-specific database developed, personnel at each installation should go through the guild data for their particular species and make appropriate modifications.

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## **Appendix: Guild Information**

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Albatross, Black-footed	<i>Diomedea nigripes</i>	DINI	BFAL	0810	R	Ground
Albatross, Laysan	<i>Diomedea immutabilis</i>	DIIM	LAAL	0821	R	Ground
Anhinga	<i>Anhinga anhinga</i>	ANAN	ANHI	1180	R	Shrub, Woody Lower Canopy
Ani, Groove-billed	<i>Crotophaga sulcirostris</i>	CRSU	GBAN	3840	C	Woody Lower Canopy
Ani, Smooth-billed	<i>Crotophaga ani</i>	CRAN	SBAN	3830	R	Woody Lower Canopy
Auklet, Cassin's	<i>Ptychoramphus aleuticus</i>	PTAL	CAAU	0160	R	Ground, Cliff
Auklet, Crested	<i>Aethia cristatella</i>	AECR	CRAU	0180	R	Ground, Cliff
Auklet, Least	<i>Aethia pusilla</i>	AEPU	LEAU	0200	R	Ground, Cliff
Auklet, Parakeet	<i>Cyclorhynchus psittacula</i>	CYPS	PAAU	0170	R	Ground, Cliff
Auklet, Rhinoceros	<i>Cerorhinca monocerata</i>	CEMO	RHAU	0150	R	Ground
Auklet, Whiskered	<i>Aethia pygmaea</i>	AEPY	WHAU	0190	R	Ground
Avocet, American	<i>Recurvirostra americana</i>	REAM	AMAV	2250	R	Ground
Becard, Rose-throated	<i>Pachyrhamphus aglaiae</i>	PAAG	RTBE	4411	C	Woody Upper Canopy
Bittern, American	<i>Botaurus lentiginosus</i>	BOLE	AMBI	1900	R	Ground
Bittern, Least	<i>Ixobrychus exilis</i>	IXEX	LEBI	1910	R	Ground, Shrub
Blackbird, Brewer's	<i>Euphagus cyanocephalus</i>	EUCY	BRBL	5100	B	Woody Upper Canopy, Ground
Blackbird, Red-winged	<i>Agelaius phoeniceus</i>	AGPH	RWBL	4980	B	Reed, Shrub
Blackbird, Rusty	<i>Euphagus carolinus</i>	EUCA1	RUBL	5090	R	Woody Lower Canopy, Shrub
Blackbird, Tricolored	<i>Agelaius tricolor</i>	AGTR	TRBL	5000	R	Reed, Shrub
Blackbird, Yellow-headed	<i>Xanthocephalus xanthocephalus</i>	XAXA	YHBL	4970	A	Reed, Shrub
Bluebird, Eastern	<i>Sialia sialis</i>	SISI	EABL	7660	B	Snag, Woody Upper Canopy
Bluebird, Mountain	<i>Sialia currucoides</i>	SICU	MOBL	7680	B	Snag, Woody Upper Canopy
Bluebird, Western	<i>Sialia mexicana</i>	SIME	WEBL	7670	B	Snag, Woody Upper Canopy
Bluethroat	<i>Luscinia svecica</i>	LUSV	BLUE	7640	R	Ground
Bobolink	<i>Dolichonyx oryzivorus</i>	DOOR	BOBO	4940	A	Ground
Bobwhite, Northern	<i>Colinus virginianus</i>	COVI	NOBO*	2890	R	Ground
Booby, Blue-footed	<i>Sula nebouxii</i>	SUNE	BFBO	1141	R	Ground
Booby, Brown	<i>Sula leucogaster</i>	SULE	BRBO	1150	R	Ground
Booby, Masked	<i>Sula dactylatra</i>	SUDA	MABO	1140	R	Ground
Booby, Red-footed	<i>Sula sula</i>	SUSU	RFBO	1160	R	Woody Upper Canopy, Ground
Brant	<i>Branta bernicla</i>	BRBE	BRAN*	1730	R	Ground
Bufflehead	<i>Bucephala albeola</i>	BUAL	BUFF	1530	R	Snag, Bank
Bunting, Indigo	<i>Passerina cyanea</i>	PACY	INBU	5980	A	Shrub, Woody Lower Canopy
Bunting, Lark	<i>Calamospiza melanocorys</i>	CAME	LARB	6050	A	Ground
Bunting, Lazuli	<i>Passerina amoena</i>	PAAM1	LASB	5990	A	Shrub, Woody Lower Canopy
Bunting, McKay's	<i>Plectrophenax hyperboreus</i>	PLHY	MKBU	5350	R	Ground, Cliff
Bunting, Painted	<i>Passerina ciris</i>	PAC11	PABU	6010	A	Shrub, Woody Lower Canopy
Bunting, Snow	<i>Plectrophenax nivalis</i>	PLNI	SNBU	5340	R	Ground, Cliff
Bunting, Varied	<i>Passerina versicolor</i>	PAVE	VABU	6000	C	Shrub, Woody Lower Canopy
Bushtit	<i>Psaltirparus minimus</i>	PSMI	BUTI*	7430	R	Woody Lower Canopy, Shrub
Canvasback	<i>Aythya valisineria</i>	AYVA	CANV	1470	R	Reed, Floating
Caracara, Crested	<i>Polyborus plancus</i>	POPL	CRCA	3620	R	Woody Upper Canopy, Shrub
Cardinal, Northern	<i>Cardinalis cardinalis</i>	CACA4	NOCA	5930	R	Shrub, Woody Lower Canopy
Catbird, Gray	<i>Dumetella carolinensis</i>	DUCA	GRCA	7040	A	Shrub, Woody Lower Canopy
Chachalaca, Plain	<i>Ortalis vetula</i>	ORVE	PLCH*	3110	R	Woody Lower Canopy
Chat, Yellow-breasted	<i>Icteria virens</i>	ICVI	YBCH	6830	A	Shrub, Woody Lower Canopy
Chickadee, Black-capped	<i>Parus atricapillus</i>	PAAT	BCCH	7350	R	Woody Lower Canopy, Snag
Chickadee, Boreal	<i>Parus hudsonicus</i>	PAHU	BOCH	7400	R	Woody Lower Canopy, Snag



LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
DINI	Scrape	Fish, Aquatic Inverts	Water	Scavenger, Ground Gleaner	Pelagic
DIIM	Scrape	Aquatic Inverts	Water	Ground Gleaner	Pelagic
ANAN	Platform	Fish, Aquatic Inverts	Water	Surface Dives	Freshwater, Swamp/Marsh
CRSU	Cup	Insects, Small Verts	Ground	Ground Gleaner	Shrubland, Swamp/Marsh
CRAN	Cup	Insects, Small Verts	Ground	Ground Gleaner	Shrubland, Grassland
PTAL	Burrow, Crevice	Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
AECR	Crevice	Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
AEPU	Crevice	Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
CYPS	Crevice	Aquatic Inverts, Fish	Water	Surface Dives	Coastal, Pelagic
CEMO	Burrow	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
AEPY	Crevice	Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
REAM	Scrape	Aquatic Inverts, Insects	Water	Prober	Swamp/Marsh, Freshwater
PAAG	Sphere	Insects, Fruit	Air	Hover Gleaner, Hawker	Forest, Shrubland
BOLE	Platform	Fish, Aquatic Inverts	Water, Ground	Ambusher, Ground Gleaner	Swamp/Marsh
IXEX	Platform	Fish, Aquatic Inverts	Water, Ground	Ambusher, Ground Gleaner	Swamp/Marsh
EUCY	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Riparian
AGPH	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Swamp/Marsh, Riparian
EUCA1	Cup	Insects, Seeds	Ground	Ground Gleaner	Swamp/Marsh, Riparian
AGTR	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Swamp/Marsh, Cropland
XAXA	Cup	Insects, Seeds	Ground, Air	Ground Gleaner, Hawker	Swamp/Marsh
SISI	Cavity	Insects, Fruit	Air, Foliage	Hawker, Foliage Gleaner	Forest Edge, Grassland
SICU	Cavity	Insects, Fruit	Ground	Swooper, Hover & Pounce	Forest, Grassland
SIME	Cavity	Insects, Fruit	Air, Foliage	Hawker, Foliage Gleaner	Riparian, Grassland
LUSV	Cup	Insects, Seeds	Ground	Ground Gleaner	Tundra, Rocky Slope
DOOR	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Grassland, Swamp/Marsh
COVI	Scrape	Greens, Seeds	Ground	Ground Gleaner	Forest Edge, Shrubland
SUNE	Scrape	Fish	Water	High Dives	Coastal, Pelagic
SULE	Scrape	Fish	Water	High Dives	Coastal, Pelagic
SUDA	Scrape	Fish	Water	High Dives	Coastal, Pelagic
SUSU	Platform, Scrape	Fish	Water	High Dives, Skimmer	Coastal, Pelagic
BRBE	Scrape	Greens, Aquatic Inverts	Water	Surface Dips, Dabblers	Tundra, Shoreline
BUAL	Cavity, Burrow	Aquatic Inverts	Water	Surface Dives	Freshwater, Forest
PACY	Cup	Insects, Seeds	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest Edge, Shrubland
CAME	Cup	Insects, Seeds	Ground, Air	Ground Gleaner, Hawker	Grassland, Shrubland
PAAM1	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Riparian
PLHY	Crevice, Cavity	Insects, Seeds	Ground	Ground Gleaner	Shoreline, Tundra
PAC11	Cup	Seeds, Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Riparian
PLNI	Crevice, Cavity	Insects, Seeds	Ground	Ground Gleaner	Shoreline, Tundra
PAVE	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland
PSMI	Pendant	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Shrubland
AYVA	Cup	Greens, Seeds	Water	Surface Dives, Prober	Swamp/Marsh, Freshwater
POPL	Platform	Carion, Small Verts	Ground	Scavenger, Ground Gleaner	Shrubland
CACA4	Cup	Insects, Seeds	Ground	Ground Gleaner	Shrubland, Urban
DUCA	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Riparian
ORVE	Saucer	Fruit, Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Riparian, Forest Edge
ICVI	Cup	Insects, Fruit	Foliage	Foliage Gleaner	Shrubland, Riparian
PAAT	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Riparian
PAHU	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Chickadee, Carolina	<i>Parus carolinensis</i>	PACA2	CACH	7360	R	Woody Lower Canopy, Snag
Chickadee, Chestnut-backed	<i>Parus rufescens</i>	PARU	CBCH	7410	R	Snag, Woody Lower Canopy
Chickadee, Mexican	<i>Parus sclateri</i>	PASC	MECH	7370	R	Snag, Woody Upper Canopy
Chickadee, Mountain	<i>Parus gambeli</i>	PAGA	MOCH	7380	R	Woody Lower Canopy, Snag
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	CACA3	CWWI	4160	A	Ground
Chukar	<i>Alectoris chukar</i>	ALCH	CHUK*	2882	R	Ground
Condor, California	<i>Gymnogyps californianus</i>	GYCA1	CALC	3240	R	Cliff
Coot, American	<i>Fulica americana</i>	FUAM	AMCO	2210	R	Floating
Cormorant, Brandt's	<i>Phalacrocorax penicillatus</i>	PHPE1	BRAC	1220	R	Cliff, Ground
Cormorant, Double-crested	<i>Phalacrocorax auritus</i>	PHAU	DCCO	1200	R	Ground, Woody Upper Canopy
Cormorant, Great	<i>Phalacrocorax carbo</i>	PHCA	GRCO	1190	R	Cliff, Woody Upper Canopy
Cormorant, Olivaceous	<i>Phalacrocorax olivaceus</i>	PHOL	OLCO	1210	R	Shrub, Woody Lower Canopy
Cormorant, Pelagic	<i>Phalacrocorax pelagicus</i>	PHPE	PECO	1230	R	Cliff, Ground
Cormorant, Red-faced	<i>Phalacrocorax urile</i>	PHUR	RFCO	1240	R	Cliff
Cowbird, Bronzed	<i>Molothrus aeneus</i>	MOAE	BROC	4960	C	Woody Upper Canopy, Shrub
Cowbird, Brown-headed	<i>Molothrus ater</i>	MOAT	BHCO	4950	B	Woody Upper Canopy, Shrub
Crane, Sandhill	<i>Grus canadensis</i>	GRCA1	SACR	2060	R	Ground
Crane, Whooping	<i>Grus americana</i>	GRAM	WHCR	2040	R	Ground
Creepers, Brown	<i>Certhia americana</i>	CEAM	BRCR	7260	B	Woody Upper Canopy
Crossbill, Red	<i>Loxia curvirostra</i>	LOCU2	RECR	5210	R	Woody Upper Canopy
Crossbill, White-winged	<i>Loxia leucoptera</i>	LOLE1	WWCR	5220	R	Woody Upper Canopy
Crow, American	<i>Corvus brachyrhynchos</i>	COBR1	AMCR	4880	R	Woody Upper Canopy, Shrub
Crow, Fish	<i>Corvus ossifragus</i>	COOS	FICR	4900	R	Woody Upper Canopy, Shrub
Crow, Northwestern	<i>Corvus caurinus</i>	COCA2	NOCR	4890	R	Woody Upper Canopy, Shrub
Cuckoo, Black-billed	<i>Coccyzus erythrophthalmus</i>	COER	BBCU	3880	A	Woody Lower Canopy, Shrub
Cuckoo, Mangrove	<i>Coccyzus minor</i>	COMI	MACU	3860	D	Woody Lower Canopy, Shrub
Cuckoo, Yellow-billed	<i>Coccyzus americanus</i>	COAM	YBCU	3870	A	Woody Lower Canopy, Shrub
Curlew, Bristle-thighed	<i>Numenius tahitiensis</i>	NUTA	BTCU	2680	R	Ground
Curlew, Eskimo	<i>Numenius borealis</i>	NUBO	ESCU*	2660	R	Ground
Curlew, Long-billed	<i>Numenius americanus</i>	NUAM	LBCU	2640	A	Ground
Dickcissel	<i>Spiza americana</i>	SPAM	DICK	6040	A	Ground, Shrub
Dipper, American	<i>Cinclus mexicanus</i>	CIME	AMDI	7010	R	Cliff, MMS
Dove, Common Ground	<i>Columbina passerina</i>	COPA	COGD	3200	R	Ground, Shrub
Dove, Inca	<i>Columbina inca</i>	COIN1	INDO	3210	R	Shrub, Woody Lower Canopy
Dove, Mourning	<i>Zenaida macroura</i>	ZEMA	MODO	3160	B	Woody Lower Canopy, Ground
Dove, Rock	<i>Columba livia</i>	COLI	RODO*	3131	R	MMS, Cliff
Dove, White-tipped	<i>Leptotila verreauxi</i>	LEVE	WTDO	3180	R	Woody Lower Canopy
Dove, White-winged	<i>Zenaida asiatica</i>	ZEAS	WWDO	3190	C	Woody Lower Canopy
Dovekie	<i>Alle alle</i>	ALAL1	DOVE	0340	R	Cliff
Dowitcher, Long-billed	<i>Limnodromus scolopaceus</i>	LISC	LBDO	2320	R	Ground
Dowitcher, Short-billed	<i>Limnodromus griseus</i>	LIGR	SBDO	2310	R	Ground
Duck, American Black	<i>Anas rubripes</i>	ANRU	ABDU	1330	R	Ground
Duck, Black-bellied Whistling	<i>Dendrocygna autumnalis</i>	DEAU1	BBWD	1770	R	Snag, Woody Upper Canopy
Duck, Fulvous Whistling	<i>Dendrocygna bicolor</i>	DEBI	FUWD	1780	R	Ground, Woody Lower Canopy
Duck, Harlequin	<i>Histrionicus histrionicus</i>	HIH1	HARD	1550	R	Ground
Duck, Masked	<i>Oxyura dominica</i>	OXDO	MADU	1680	R	Ground
Duck, Mottled	<i>Anas fulvigula</i>	ANFU	MODU	1340	R	Ground
Duck, Ring-necked	<i>Aythya collaris</i>	AYCO	RNDU	1500	R	Ground, Floating

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
PACA2	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Riparian
PARU	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest
PASC	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest
PAGA	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest
CACA3	None	Insects, Birds	Air	Aerial Foraging	Forest
ALCH	Scrape	Seeds, Insects	Ground	Ground Gleaner	Grassland, Shrubland
GYCA1	None	Carrion, Fish	Ground	Scavenger, High Patrol	Rocky Slope
FUAM	Platform	Greens, Aquatic Inverts	Water, Ground	Surface Dips, Ground Gleaner	Freshwater, Swamp/Marsh
PHPE1	Saucer	Fish	Water	Surface Dives	Coastal, Pelagic
PHAU	Platform	Fish, Aquatic Inverts	Water	Surface Dives, Surface Dips	Coastal, Freshwater
PHCA	Platform	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
PAHU	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest
PACA3	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Riparian
PHUR	Platform	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
MOAE	Parasitic	Insects, Seeds	Ground	Ground Gleaner	Shrubland, Cropland
MOAT	Parasitic	Insects, Seeds	Ground	Ground Gleaner	Forest Edge, Forest
GRCA1	Saucer	Aquatic Inverts, Insects	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh, Freshwater
GRAM	Saucer	Aquatic Inverts, Fish	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh, Freshwater
CEAM	Cup	Insects, Nuts	Bark, Air	Bark Gleaner, Hawker	Forest
LOCU2	Cup	Seeds, Fruit	Foliage	Foliage Gleaner	Forest
LOLE1	Cup	Seeds	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest
COBR1	Cup	Insects, Seeds	Ground	Scavenger, Ground Gleaner	Forest, Riparian
COOS	Cup	Aquatic Inverts, Carrion	Ground	Scavenger, Ground Gleaner	Shoreline, Freshwater
COCA2	Cup	Aquatic Inverts, Insects	Ground	Scavenger, Ground Gleaner	Forest, Forest Edge
COER	Platform, Parasitic	Insects, Fish	Foliage	Scavenger, Foliage Gleaner	Forest, Forest Edge
COMI	Platform	Insects, Fruit	Foliage	Foliage Gleaner	Swamp/Marsh, Shrubland
COAM	Platform, Parasitic	Insects	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest, Riparian
NUTA	Scrape	Fruit, Insects	Ground	Ground Gleaner	Tundra
NUBO	Scrape	Insects, Fruit	Ground	Ground Gleaner, Prober	Tundra, Shoreline
NUAM	Scrape	Insects, Aquatic Inverts	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh, Riparian
SPAM	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Cropland
CIME	Oven	Aquatic Inverts, Fish	Water	Prober	Freshwater, Riparian
COPA	Saucer	Seeds, Fruit	Ground	Ground Gleaner	Forest Edge, Urban
COIN1	Saucer	Seeds	Ground	Ground Gleaner	Forest Edge, Shrubland
ZEMA	Saucer	Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest Edge, Cropland
COLI	Saucer	Seeds	Ground	Ground Gleaner	Urban
LEVE	Saucer	Seeds, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Riparian, Cropland
ZEAS	Saucer	Seeds, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Riparian, Shrubland
ALAL1	Crevice	Aquatic Inverts, Fish	Water	Surface Dives	Coastal, Pelagic
LISC	Scrape	Aquatic Inverts, Insects	Water	Prober	Tundra, Swamp/Marsh
LIGR	Scrape	Aquatic Inverts, Insects	Water	Prober	Tundra, Swamp/Marsh
ANRU	Scrape	Aquatic Inverts, Seeds	Water	Dabbler	Swamp/Marsh, Riparian
DEAU1	Cavity	Seeds	Ground	Ground Gleaner	Swamp/Marsh, Riparian
DEBI	Saucer	Greens, Seeds	Water, Ground	Surface Dips, Ground Gleaner	Swamp/Marsh
HIHI1	Scrape	Aquatic Inverts	Water	Surface Dives, Dabbler	Freshwater, Coastal
OXDO	Scrape	Greens, Insects	Water	Surface Dives	Swamp/Marsh, Freshwater
ANFU	Scrape	Aquatic Inverts, Insects	Water	Dabbler	Swamp/Marsh
AYCO	Scrape	Greens, Aquatic Inverts	Water	Surface Dives	Swamp/Marsh

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Duck, Ruddy	<i>Oxyura jamaicensis</i>	OXJA	RUDU	1670	R	Ground
Duck, Tufted	<i>Aythya fuligula</i>	AYFU	TUDU	1491	R	Ground, Bank
Duck, Wood	<i>Aix sponsa</i>	AISP	WODU	1440	R	Snag, MMS
Dunlin	<i>Calidris alpina</i>	CAAL1	DUNL	2430	R	Ground
Eagle, Bald	<i>Haliaeetus leucocephalus</i>	HALE	BAEA	3520	R	Woody Upper Canopy, Cliff
Eagle, Golden	<i>Aquila chrysaetos</i>	AQCH	GOEA	3490	B	Cliff, Woody Upper Canopy
Eagle, White-tailed	<i>Haliaeetus albicilla</i>	HAAL	WTEA*	3510	R	Woody Upper Canopy, Cliff
Egret, Cattle	<i>Bubulcus ibis</i>	BUIB	CAEG	2001	R	Woody Lower Canopy, Shrub
Egret, Great	<i>Casmerodius albus</i>	CAAL2	GREG	1960	R	Woody Upper Canopy, Shrub
Egret, Reddish	<i>Egretta rufescens</i>	EGRU	REEG	1980	R	Woody Lower Canopy, Shrub
Egret, Snowy	<i>Egretta thula</i>	EGTH	SNEG	1970	R	Woody Lower Canopy, Shrub
Eider, Common	<i>Somateria mollissima</i>	SOMO	COEI	1590	R	Ground
Eider, King	<i>Somateria spectabilis</i>	SOSP	KIEI	1620	R	Ground
Eider, Spectacled	<i>Somateria fischeri</i>	SOFI	SPEI	1580	R	Ground
Eider, Steller's	<i>Polysticta stelleri</i>	POST	STEI	1570	R	Ground
Falcon, Aplomado	<i>Falco femoralis</i>	FAFE	APFA	3590	R	Woody Lower Canopy, Shrub
Falcon, Peregrine	<i>Falco peregrinus</i>	FAPE	PEFA	3560	A	Cliff, Woody Upper Canopy
Falcon, Prairie	<i>Falco mexicanus</i>	FAME	PRFA	3550	B	Cliff, Woody Upper Canopy
Fieldfare	<i>Turdus pilaris</i>	TUPI	FIEL	7612	R	Ground, Woody Lower Canopy
Finch, Cassin's	<i>Carpodacus cassinii</i>	CACA7	CAFI	5180	B	Woody Upper Canopy
Finch, House	<i>Carpodacus mexicanus</i>	CAME2	HOFI	5190	R	Woody Upper Canopy, Shrub
Finch, Purple	<i>Carpodacus purpureus</i>	CAPU1	PUFI	5170	B	Woody Upper Canopy
Finch, Rosy	<i>Leucosticte arctoa</i>	LEAR	ROFI*	5240	R	Ground, Cliff
Flamingo, Greater	<i>Phoenicopterus ruber</i>	PHRU	GREF	1820	R	Ground
Flicker, Northern	<i>Colaptes auratus</i>	COAU	NOFL*	4120	B	Snag, Woody Lower Canopy
Flycatcher, Acadian	<i>Empidonax virescens</i>	EMVI	ACFL	4650	A	Woody Lower Canopy, Shrub
Flycatcher, Alder	<i>Empidonax alnorum</i>	EMAL	ALFL	4661	A	Shrub, Woody Lower Canopy
Flycatcher, Ash-throated	<i>Myiarchus cinerascens</i>	MYCI	ATFL	4540	A	Woody Lower Canopy
Flycatcher, Brown-crested	<i>Myiarchus tyrannulus</i>	MYTY	BCFL	4530	C	Woody Lower Canopy, Shrub
Flycatcher, Buff-breasted	<i>Empidonax fulvifrons</i>	EMFU	BBFL	4700	C	Woody Upper Canopy
Flycatcher, Dusky	<i>Empidonax oberholseri</i>	EMOB	DUFL	4690	A	Shrub, Woody Lower Canopy
Flycatcher, Dusky-capped	<i>Myiarchus tuberculifer</i>	MYTU	DCFL	4550	C	Woody Upper Canopy
Flycatcher, Gray	<i>Empidonax wrightii</i>	EMWR	GRFL	4691	A	Shrub, Woody Lower Canopy
Flycatcher, Great-crested	<i>Myiarchus crinitus</i>	MYCR	GCFL	4520	A	Woody Upper Canopy, Snag
Flycatcher, Hammond's	<i>Empidonax hammondii</i>	EMHA	HAFL	4680	A	Woody Upper Canopy
Flycatcher, Least	<i>Empidonax minimus</i>	EMMI1	LEFL	4670	A	Woody Upper Canopy, Shrub
Flycatcher, Olive-sided	<i>Contopus borealis</i>	COBO	OSFL	4590	A	Woody Upper Canopy
Flycatcher, Scissor-tailed	<i>Tyrannus forficatus</i>	TYFO	STFL	4430	A	Woody Upper Canopy, Shrub
Flycatcher, Sulphur-bellied	<i>Myiodynastes luteiventris</i>	MYLU	SBFL	4510	C	Woody Upper Canopy
Flycatcher, Vermilion	<i>Pyrocephalus rubinus</i>	PYRU	VEFL	4710	A	Woody Upper Canopy
Flycatcher, Western	<i>Empidonax difficilis</i>	EMDI	WEFL	4640	R	Woody Lower Canopy, Cliff
Flycatcher, Willow	<i>Empidonax traillii</i>	EMTR	WIFL	4660	A	Shrub, Woody Lower Canopy
Flycatcher, Yellow-bellied	<i>Empidonax flaviventris</i>	EMFL	YBFL	4630	A	Ground
Frigatebird, Magnificent	<i>Fregata magnificens</i>	FRMA	MAFR	1280	R	Shrub, Woody Lower Canopy
Fulmar, Northern	<i>Fulmarus glacialis</i>	FUGL	NOFU	0860	R	Cliff, Ground
Gadwall	<i>Anas strepera</i>	ANST	GADW	1350	R	Ground
Gallinule, Purple	<i>Porphyryla martinica</i>	POMA	PUGA	2180	R	Floating
Gannet, Northern	<i>Sula bassanus</i>	SUBA	NOGA	1170	R	Cliff, Ground

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
OXJA	Scrape	Aquatic Inverts, Greens	Water	Surface Dives	Swamp/Marsh, Freshwater
AYFU	Burrow	Greens, Insects	Water	Ground Gleaner, Skimmer	Coastal, Freshwater
AISP	Cavity	Aquatic Inverts, Seeds	Water	Dabbler	Swamp/Marsh, Riparian
CAAL1	Scrape	Insects, Seeds	Ground, Water	Ground Gleaner, Prober	Coastal, Tundra
HALE	Platform	Fish, Birds	Water, Ground	High Patrol, Low Patrol	Freshwater, Coastal
AQCH	Platform	Small Mammals, Birds	Ground	High Patrol, Swooper	Grassland, Forest Edge
HAAL	Platform	Fish, Birds	Water, Air	Skimmer, Hawker	Tundra, Coastal
BUIB	Platform	Insects, Small Verts	Ground	Ground Gleaner	Swamp/Marsh, Grassland
CAAL2	Platform	Fish, Small Verts	Water	Ambusher	Swamp/Marsh
EGRU	Platform	Fish, Aquatic Inverts	Water	Ambusher	Coastal, Swamp/Marsh
EGTH	Platform	Aquatic Inverts, Fish	Water	Ambusher	Swamp/Marsh, Freshwater
SOMO	Scrape	Aquatic Inverts, Fish	Water	Surface Dives, Dabbler	Tundra, Coastal
SOSP	Scrape	Aquatic Inverts	Water	Surface Dives, Dabbler	Tundra, Coastal
SOFI	Scrape	Aquatic Inverts, Greens	Water	Dabbler, Surface Dips	Tundra, Coastal
POST	Scrape	Aquatic Inverts, Greens	Water	Dabbler, Surface Dips	Tundra, Coastal
FAFE	Platform	Birds, Insects	Air	Aerial Pursuit, Hawker	Grassland, Shrubland
FAPE	Scrape	Birds	Air	Aerial Pursuit	Forest, Grassland
FAME	Scrape, Crevice	Birds, Small Mammals	Air, Ground	Aerial Pursuit, Low Patrol	Grassland, Tundra
TUPI	Cup	Insects, Seeds	Ground	Ground Gleaner	Forest
CACA7	Cup	Seeds, Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest
CAME2	Cup, Cavity	Seeds, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Urban
CAPU1	Cup	Seeds, Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Forest Edge
LEAR	Cup, Crevice	Seeds, Insects	Ground	Ground Gleaner	Rocky Slope, Tundra
PHRU	Saucer	Aquatic Inverts, Greens	Water	Prober	Coastal, Swamp/Marsh
COAU	Cavity	Insects, Seeds	Ground, Air	Ground Gleaner, Hawker	Forest, Urban
EMVI	Cup	Insects, Fruit	Air	Hawker	Riparian, Swamp/Marsh
EMAL	Cup	Insects, Fruit	Air	Hawker	Swamp/Marsh, Shrubland
MYCI	Cavity	Insects, Fruit	Air	Hover Gleaner, Hawker	Shrubland, Riparian
MYTY	Cavity	Insects, Fruit	Air	Hover Gleaner, Hawker	Shrubland, Desert
EMFU	Cup	Insects	Air	Hawker	Forest
EMOB	Cup	Insects	Air	Hawker, Hover Gleaner	Forest, Shrubland
MYTU	Cavity	Insects, Fruit	Air	Hover Gleaner, Hawker	Riparian, Forest
EMWR	Cup	Insects	Air, Ground	Hawker, Ground Gleaner	Shrubland
MYCR	Cavity	Insects, Fruit	Air, Ground	Hawker, Ground Gleaner	Forest Edge, Forest
EMHA	Cup	Insects	Air	Hawker	Forest
EMMI1	Cup	Insects, Fruit	Air	Hover Gleaner, Hawker	Forest, Urban
COBO	Cup	Insects	Air	Hawker	Forest
TYFO	Cup	Insects, Fruit	Air, Foliage	Hawker, Foliage Gleaner	Grassland, Shrubland
MYLU	Cavity	Insects, Fruit	Air	Hawker	Riparian, Forest
PYRU	Cup	Insects	Air	Hawker, Hover & Pounce	Riparian, Forest Edge
EMDI	Cavity	Insects, Fruit	Air	Hawker, Hover Gleaner	Forest, Riparian
EMTR	Cup	Insects, Fruit	Air	Hawker, Hover Gleaner	Swamp/Marsh
EMFL	Cup	Insects, Fruit	Air	Hawker, Hover Gleaner	Forest, Swamp/Marsh
FRMA	Platform	Fish, Aquatic Inverts	Water, Air	Low Patrol, Hawker	Coastal, Pelagic
FUGL	Scrape, Saucer	Fish, Aquatic Inverts	Water	Surface Dips, High Dives	Pelagic
ANST	Scrape	Greens, Insects	Water	Dabbler, Surface Dives	Swamp/Marsh, Grassland
POMA	Platform	Seeds, Fruit	Ground	Ground Gleaner	Swamp/Marsh
SUBA	Platform	Fish	Water	High Dives	Coastal, Pelagic

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Gnatcatcher, Black-tailed	<i>Polioptila melanura</i>	POME	BTGN	7520	R	Shrub, Woody Lower Canopy
Gnatcatcher, Blue-gray	<i>Polioptila caerulea</i>	POCA	BGGN	7510	A	Woody Lower Canopy
Godwit, Bar-tailed	<i>Limosa lapponica</i>	LILA	BARG	2500	R	Ground
Godwit, Hudsonian	<i>Limosa haemastica</i>	LIHA	HUGO	2510	R	Ground
Godwit, Marbled	<i>Limosa fedoa</i>	LIFE	MAGO	2490	R	Ground
Goldeneye, Barrow's	<i>Bucephala islandica</i>	BUIS	BAGO	1520	R	Snag, Woody Upper Canopy
Goldeneye, Common	<i>Bucephala clangula</i>	BUCL	COGO	1510	R	Snag, Woody Upper Canopy
Goldfinch, American	<i>Carduelis tristis</i>	CATR	AMGO	5290	B	Shrub, Woody Lower Canopy
Goldfinch, Lawrence's	<i>Carduelis lawrencei</i>	CALA3	LAGO	5310	B	Woody Upper Canopy, Shrub
Goldfinch, Lesser	<i>Carduelis psaltria</i>	CAPS	LEGO	5300	B	Woody Lower Canopy, Shrub
Goose, Barnacle	<i>Branta leucopsis</i>	BRLE	BRNG	1750	R	Cliff, Ground
Goose, Canada	<i>Branta canadensis</i>	BRCA1	CAGO	1720	R	Ground
Goose, Emperor	<i>Chen canagica</i>	CHCA1	EMGO	1760	R	Ground
Goose, Greater White-fronted	<i>Anser albifrons</i>	ANAL	GWFG	1710	R	Ground
Goose, Pink-footed	<i>Anser brachyrhynchus</i>	ANBR	PFGO	1712	R	Ground, Cliff
Goose, Ross'	<i>Chen rossii</i>	CHRO	ROGO	1700	R	Ground
Goose, Snow	<i>Chen caerulescens</i>	CHCA	SNGO*	1690	R	Ground
Goshawk, Northern	<i>Accipiter gentilis</i>	ACGE	NOGO	3340	B	Woody Upper Canopy
Grackle, Boat-tailed	<i>Quiscalus major</i>	QUMA	BTGR	5130	R	Woody Lower Canopy, Shrub
Grackle, Common	<i>Quiscalus quiscula</i>	QUQU	COGR	5110	R	Woody Lower Canopy
Grackle, Great-tailed	<i>Quiscalus mexicanus</i>	QUME	GTGR	5120	R	Woody Lower Canopy, Shrub
Grebe, Clark's	<i>Aechmophorus clarkii</i>	AECL	CLGR	0011	R	Ground
Grebe, Eared	<i>Podiceps nigricollis</i>	PONI	EAGR	0040	R	Floating
Grebe, Horned	<i>Podiceps auritus</i>	POAU	HOGR	0030	R	Floating
Grebe, Least	<i>Tachybaptus dominicus</i>	TADO	LEGR	0050	R	Floating
Grebe, Pied-billed	<i>Podilymbus podiceps</i>	POPO	PBGR	0060	R	Floating
Grebe, Red-necked	<i>Podiceps grisegena</i>	POGR	RNGR	0020	R	Floating
Grebe, Western	<i>Aechmophorus occidentalis</i>	AEOC	WEGR	0010	R	Floating
Grosbeak, Black-headed	<i>Pheucticus melanocephalus</i>	PHME1	BHGR	5960	A	Woody Lower Canopy, Shrub
Grosbeak, Blue	<i>Guiraca caerulea</i>	GUCA	BLGR	5970	A	Shrub, Woody Lower Canopy
Grosbeak, Evening	<i>Coccothraustes vespertinus</i>	COVE	EVGR	5140	R	Woody Upper Canopy
Grosbeak, Pine	<i>Pinicola enucleator</i>	PIEN	PIGR	5150	R	Woody Lower Canopy, Shrub
Grosbeak, Rose-breasted	<i>Pheucticus ludovicianus</i>	PHLU	RBGR	5950	A	Woody Lower Canopy, Shrub
Grouse, Blue	<i>Dendragapus obscurus</i>	DEOB	BLGS*	2970	R	Ground
Grouse, Ruffed	<i>Bonasa umbellus</i>	BOUM	RUGR*	3000	R	Ground
Grouse, Sage	<i>Centrocercus urophasianus</i>	CEUR	SAGR*	3090	R	Ground
Grouse, Sharp-tailed	<i>Tympanuchus phasianellus</i>	TYPH	STGR*	3080	R	Ground
Grouse, Spruce	<i>Dendragapus canadensis</i>	DECA	SPGR*	2980	R	Ground
Guillemot, Black	<i>Cephus grylle</i>	CEGR	BLGU	0270	R	Cliff, Ground
Guillemot, Pigeon	<i>Cephus columba</i>	CECO1	PIGU	0290	R	Cliff
Gull, Bonaparte's	<i>Larus philadelphia</i>	LAPH	BOGU	0600	R	Woody Lower Canopy, Ground
Gull, California	<i>Larus californicus</i>	LACA1	CAGU	0530	R	Ground
Gull, Common Black-headed	<i>Larus ridibundus</i>	LARI	CBHG	0551	R	Ground
Gull, Franklin's	<i>Larus pipixcan</i>	LAPI	FRGU	0590	R	Floating
Gull, Glaucous	<i>Larus hyperboreus</i>	LAHY	GLGU	0420	R	Cliff, Ground
Gull, Glaucous-winged	<i>Larus glaucescens</i>	LAGL	GWGU	0440	R	Cliff, Ground
Gull, Great Black-backed	<i>Larus marinus</i>	LAMA	GBBG	0470	R	Ground
Gull, Heermann's	<i>Larus heermanni</i>	LAHE	HEEG	0570	R	Ground

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
POME	Cup	Insects, Seeds	Foliage, Air	Foliage Gleaner, Hover Gleaner	Shrubland
POCA	Cup	Insects	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest, Shrubland
LILA	Scrape	Aquatic Inverts, Insects	Water	Prober	Tundra, Coastal
LIHA	Scrape	Insects, Aquatic Inverts	Water	Prober	Tundra
LIFE	Scrape	Aquatic Inverts, Insects	Water, Ground	Prober, Ground Gleaner	Grassland, Swamp/Marsh
BUIS	Cavity	Aquatic Inverts	Water	Surface Dives	Swamp/Marsh, Freshwater
BUCL	Cavity	Aquatic Inverts, Fish	Water	Surface Dives	Freshwater, Swamp/Marsh
CATR	Cup	Seeds, Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Grassland, Riparian
CALA3	Cup	Seeds, Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Riparian, Shrubland
CAPS	Cup	Seeds, Insects	Foliage	Foliage Gleaner	Forest Edge, Grassland
BRLE	Scrape	Greens, Seeds	Ground	Ground Gleaner	Tundra, Coastal
BRCA1	Scrape	Greens, Aquatic Inverts	Water	Surface Dips, Dabbler	Swamp/Marsh, Freshwater
CHCA1	Scrape	Greens, Aquatic Inverts	Ground, Water	Ground Gleaner, Dabbler	Swamp/Marsh, Tundra
ANAL	Scrape	Greens, Aquatic Inverts	Water	Surface Dips, Dabbler	Freshwater, Swamp/Marsh
ANBR	Scrape	Grain, Greens	Ground	Ground Gleaner	Tundra, Coastal
CHRO	Scrape	Greens, Aquatic Inverts	Water	Surface Dips, Dabbler	Freshwater, Tundra
CHCA	Scrape	Greens, Aquatic Inverts	Water	Surface Dips, Dabbler	Tundra, Freshwater
ACGE	Platform	Birds, Small Mammals	Air, Ground	Aerial Pursuit, Low Patrol	Forest
QUMA	Cup	Insects, Small Verts	Ground, Air	Ground Gleaner, Hawker	Swamp/Marsh, Cropland
QUQU	Cup, Cavity	Insects, Aquatic Inverts	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Grassland, Urban
QUME	Cup	Insects, Small Verts	Ground	Ground Gleaner	Grassland, Swamp/Marsh
AECL	Platform	Fish, Aquatic Inverts	Water	Surface Dives	Freshwater, Swamp/Marsh
PONI	Platform	Aquatic Inverts, Fish	Water	Surface Dives	Swamp/Marsh, Freshwater
POAU	Platform	Aquatic Inverts, Fish	Water	Surface Dives	Swamp/Marsh, Freshwater
TADO	Platform	Aquatic Inverts, Fish	Water	Surface Dives	Freshwater, Swamp/Marsh
POPO	Platform	Aquatic Inverts, Fish	Water	Surface Dives	Swamp/Marsh, Riparian
POGR	Platform	Aquatic Inverts, Fish	Water	Surface Dives	Freshwater, Swamp/Marsh
AEOC	Platform	Fish, Aquatic Inverts	Water	Surface Dives	Swamp/Marsh, Freshwater
PHME1	Cup	Insects, Seeds	Foliage	Foliage Gleaner	Riparian, Forest Edge
GUCA	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Riparian, Forest Edge
COVE	Cup	Seeds, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Urban
PIEN	Cup	Seeds, Fruit	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest, Forest Edge
PHLU	Cup	Insects, Seeds	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest, Shrubland
DEOB	Scrape	Greens, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest
BOUM	Scrape	Greens, Seeds	Foliage, Ground	Foliage Browser, Ground Gleaner	Forest
CEUR	Scrape	Greens, Insects	Foliage, Ground	Foliage Browser, Ground Gleaner	Shrubland
TYPH	Scrape	Greens, Seeds	Ground, Foliage	Ground Gleaner, Foliage Browser	Grassland, Shrubland
DECA	Scrape	Greens, Fruit	Foliage, Ground	Foliage Browser, Ground Gleaner	Forest
CEGR	Crevise	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
CECO1	Crevise, Burrow	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
LAPH	Saucer	Insects, Aquatic Inverts	Ground, Water	Scavenger, Surface Dives	Shoreline, Freshwater
LACA1	Scrape	Insects, Small Verts	Water	Scavenger, Surface Dives	Coastal, Freshwater
LARI	Scrape	Insects	Water	Scavenger, Ground Gleaner	Coastal, Freshwater
LAPI	Platform	Insects	Water	Scavenger, Ground Gleaner	Freshwater, Cropland
LAHY	Saucer	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal
LAGL	Saucer	Aquatic Inverts, Fish	Water, Ground	Scavenger, Ground Gleaner	Coastal
LAMA	Saucer	Birds, Fish	Ground, Water	Scavenger, Ground Gleaner	Coastal
LAHE	Scrape, Saucer	Fish, Aquatic Inverts	Water	Scavenger, High Dives	Coastal

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Gull, Herring	<i>Larus argentatus</i>	LAAR	HERG	0510	R	Ground, Cliff
Gull, Iceland	<i>Larus glaucoides</i>	LAGL1	ICGU	0430	R	Cliff, Ground
Gull, Ivory	<i>Pagophila eburnea</i>	PAEB	IVGU	0390	R	Ground, Cliff
Gull, Laughing	<i>Larus atricilla</i>	LAAT	LAGU	0580	R	Ground
Gull, Lesser Black-backed	<i>Larus fuscus</i>	LAFU	LBBG	0500	R	Ground
Gull, Little	<i>Larus minutus</i>	LAMI	LIGU	0601	R	Ground
Gull, Mew	<i>Larus canus</i>	LACA2	MEGU	0550	R	Ground, Floating
Gull, Ring-billed	<i>Larus delawarensis</i>	LADE1	RBGU	0540	R	Ground
Gull, Ross'	<i>Rhodostethia rosea</i>	RHRO	ROGU	0610	R	Ground
Gull, Sabine's	<i>Xema sabini</i>	XESA	SAGU	0620	R	Ground
Gull, Thayer's	<i>Larus thayeri</i>	LATH	THGU	0431	R	Cliff
Gull, Western	<i>Larus occidentalis</i>	LAOC	WEGU	0490	R	Cliff, Ground
Gull, Yellow-footed	<i>Larus livens</i>	LALI	YFGU	0491	R	Ground
Gyr Falcon	<i>Falco rusticolus</i>	FARU	GYRF	3540	R	Cliff, Woody Upper Canopy
Harrier, Northern	<i>Circus cyaneus</i>	CICY	NOHA	3310	B	Ground, Shrub
Hawk, Broad-winged	<i>Buteo platypterus</i>	BUPL	BWHA	3430	A	Woody Upper Canopy
Hawk, Common Black	<i>Buteogallus anthracinus</i>	BUAN	CBHA	3450	C	Woody Upper Canopy
Hawk, Cooper's	<i>Accipiter cooperii</i>	ACCO	COHA	3330	B	Woody Upper Canopy
Hawk, Ferruginous	<i>Buteo regalis</i>	BURE1	FEHA	3480	B	Woody Upper Canopy, Cliff
Hawk, Gray	<i>Buteo nitidus</i>	BUNI	GRHA	3460	C	Woody Upper Canopy
Hawk, Harris'	<i>Parabuteo unicinctus</i>	PAUN	HRSH	3350	R	Woody Upper Canopy, Shrub
Hawk, Red-shouldered	<i>Buteo lineatus</i>	BULI	RSHA	3390	B	Woody Upper Canopy
Hawk, Red-tailed	<i>Buteo jamaicensis</i>	BUJA	RTHA	3370	B	Woody Upper Canopy, Cliff
Hawk, Rough-legged	<i>Buteo lagopus</i>	BULA	RLHA	3470	R	Cliff, Woody Upper Canopy
Hawk, Sharp-shinned	<i>Accipiter striatus</i>	ACST	SSHA	3320	B	Woody Upper Canopy
Hawk, Short-tailed	<i>Buteo brachyurus</i>	BUBR	STHA	3440	R	Woody Upper Canopy
Hawk, Swainson's	<i>Buteo swainsoni</i>	BUSW	SWHA	3420	A	Woody Upper Canopy, Cliff
Hawk, White-tailed	<i>Buteo albicaudatus</i>	BUAL2	WTHA	3410	R	Woody Lower Canopy, Shrub
Hawk, Zone-tailed	<i>Buteo albonotatus</i>	BUAL3	ZTHA	3400	C	Woody Upper Canopy
Heron, Black-crowned Night	<i>Nycticorax nycticorax</i>	NYNY	BCNH	2020	R	Woody Lower Canopy, Ground
Heron, Great Blue	<i>Ardea herodias</i>	ARHE	GTBH	1940	R	Woody Upper Canopy
Heron, Green-backed	<i>Butorides striatus</i>	BUST	GNBH	2010	R	Woody Lower Canopy, Shrub
Heron, Little Blue	<i>Egretta caerulea</i>	EGCA	LBHE	2000	R	Woody Upper Canopy, Shrub
Heron, Tricolored	<i>Egretta tricolor</i>	EGTR	TRHE	1990	R	Woody Lower Canopy, Shrub
Heron, Yellow-crowned Night	<i>Nycticorax violaceus</i>	NYVI	YCNH	2030	R	Woody Upper Canopy, Shrub
Hummingbird, Allen's	<i>Selasphorus sasin</i>	SESA	ALHU	4340	A	Woody Lower Canopy, Shrub
Hummingbird, Anna's	<i>Calypte anna</i>	CAAN	ANHU	4310	B	Woody Lower Canopy, Shrub
Hummingbird, Berylline	<i>Amazilia beryllina</i>	AMBE	BEHU	4381	R	Woody Upper Canopy
Hummingbird, Black-chinned	<i>Archilochus alexandri</i>	ARAL1	BCHU	4290	A	Woody Lower Canopy
Hummingbird, Blue-throated	<i>Lampornis clemenciae</i>	LACL	BLUH	4270	C	Ground, Woody Lower Canopy
Hummingbird, Broad-billed	<i>Cynanthus latirostris</i>	CYLA	BBLH	4410	C	Woody Lower Canopy, Shrub
Hummingbird, Broad-tailed	<i>Selasphorus platycercus</i>	SEPL	BTLH	4320	A	Woody Lower Canopy
Hummingbird, Buff-bellied	<i>Amazilia yucatanensis</i>	AMYU	BUFH	4390	C	Shrub, Woody Lower Canopy
Hummingbird, Calliope	<i>Stellula calliope</i>	STCA	CAHU	4360	A	Woody Upper Canopy, Shrub
Hummingbird, Costa's	<i>Calypte costae</i>	CACO	COHU	4300	A	Shrub, Woody Lower Canopy
Hummingbird, Lucifer	<i>Calothorax lucifer</i>	CALU	LUHU	4370	C	Shrub, Woody Lower Canopy
Hummingbird, Magnificent	<i>Eugenes fulgens</i>	EUFU	MAHU	4260	C	Woody Upper Canopy
Hummingbird, Ruby-throated	<i>Archilochus colubris</i>	ARCO	RTHU	4280	A	Woody Lower Canopy



LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
LAAR	Saucer	Seeds, Birds	Water, Ground	Scavenger, Ground Gleaner	Coastal, Freshwater
LAGL1	Saucer	Fish, Aquatic Inverts	Water	Scavenger, High Dives	Coastal
PAEB	Saucer, Scrape	Fish, Aquatic Inverts	Water, Ground	Scavenger, High Dives	Coastal
LAAT	Scrape, Saucer	Aquatic Inverts	Ground, Water	Scavenger, Ground Gleaner	Swamp/Marsh
LAFU	Saucer	Fish, Aquatic Inverts	Water	Scavenger	Coastal
LAMI	Scrape	Insects, Aquatic Inverts	Water	Surface Dips	Swamp/Marsh, Grassland
LACA2	Scrape, Cup	Insects	Ground, Water	Scavenger, Ground Gleaner	Coastal, Tundra
LADE1	Saucer	Fish, Insects	Ground, Water	Scavenger, Ground Gleaner	Freshwater, Coastal
RHRO	Scrape	Insects, Fish	Water, Ground	Surface Dips, Ground Gleaner	Coastal, Tundra
XESA	Scrape	Fish, Insects	Ground, Water	Scavenger, Ground Gleaner	Tundra, Freshwater
LATH	Saucer	Fish, Fruit	Water, Ground	Scavenger, Low Patrol	Coastal
LAOC	Saucer	Fish, Aquatic Inverts	Water, Ground	Scavenger, Low Patrol	Coastal
LALI	Saucer	Fish, Aquatic Inverts	Water	Scavenger	Coastal
FARU	Scrape	Birds, Small Mammals	Air, Ground	Aerial Pursuit, Low Patrol	Tundra, Rocky Slope
CICY	Platform	Small Mammals, Small Verts	Ground, Air	Low Patrol	Grassland, Swamp/Marsh
BUPL	Platform	Small Mammals, Birds	Ground, Air	Swooper	Forest
BUAN	Platform	Small Verts, Fish	Ground, Water	Swooper	Swamp/Marsh, Riparian
ACCO	Platform	Birds, Small Mammals	Air, Ground	Aerial Pursuit, Low Patrol	Forest, Riparian
BURE1	Platform	Small Mammals, Birds	Ground	Hover & Pounce, Swooper	Grassland
BUNI	Platform	Small Verts, Birds	Ground	Swooper, Low Patrol	Riparian, Forest
PAUN	Platform	Small Mammals, Small Verts	Ground	Low Patrol, Swooper	Grassland, Shrubland
BULI	Platform	Small Mammals, Small Verts	Ground	Low Patrol, High Patrol	Riparian, Swamp/Marsh
BUJA	Platform	Small Mammals, Birds	Ground	High Patrol, Swooper	Forest, Grassland
BULA	Platform	Small Mammals, Insects	Ground	Hover & Pounce, Swooper	Forest, Tundra
ACST	Platform	Birds	Air	Aerial Pursuit	Forest
BUBR	Platform	Birds	Ground	High Patrol	Grassland, Swamp/Marsh
BUSW	Platform	Small Mammals, Small Verts	Ground	High Patrol	Grassland, Forest
BUAL2	Platform	Small Mammals, Small Verts	Ground	High Patrol, Hover & Pounce	Grassland, Shrubland
BUAL3	Platform	Small Verts, Birds	Ground	High Patrol	Shrubland, Grassland
NYNY	Platform	Fish, Small Verts	Water	Ambusher	Swamp/Marsh, Freshwater
ARHE	Platform	Fish, Aquatic Inverts	Water	Ambusher	Swamp/Marsh, Freshwater
BUST	Platform	Fish, Insects	Water	Ambusher	Swamp/Marsh, Freshwater
EGCA	Platform	Fish, Small Verts	Water	Ambusher	Swamp/Marsh, Freshwater
EGTR	Platform	Fish, Small Verts	Water	Ambusher	Swamp/Marsh, Freshwater
NYVI	Platform	Aquatic Inverts, Insects	Water, Ground	Ambusher, Ground Gleaner	Swamp/Marsh, Freshwater
SESA	Cup	Nectar, Insects	Air	Hover Gleaner, Hawker	Shrubland, Forest
CAAN	Cup	Nectar, Insects	Air	Hover Gleaner, Hawker	Forest, Shrubland
AMBE	Cup	Nectar, Insects	Air	Hover Gleaner	Forest
ARAL1	Cup	Nectar, Insects	Air	Hover Gleaner, Hawker	Forest, Shrubland
LACL	Cup	Insects, Nectar	Air	Hover Gleaner, Hawker	Forest, Riparian
CYLA	Cup	Nectar, Insects	Air	Hover Gleaner	Shrubland, Riparian
SEPL	Cup	Nectar, Insects	Air	Hover Gleaner, Hawker	Forest, Shrubland
AMYU	Cup	Nectar, Insects	Air	Hover Gleaner	Forest, Shrubland
STCA	Cup	Nectar, Insects	Air	Hover Gleaner, Hawker	Forest, Shrubland
CACO	Cup	Nectar, Insects	Air	Hover Gleaner	Shrubland
CALU	Cup	Insects, Nectar	Air	Hover Gleaner	Shrubland
EUFU	Cup	Nectar, Insects	Air	Hover Gleaner	Forest
ARCO	Cup	Nectar, Insects	Air	Hover Gleaner	Forest, Urban

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Hummingbird, Rufous	<i>Selasphorus rufus</i>	SERU	RUHU	4330	A	Woody Lower Canopy
Hummingbird, Violet-crowned	<i>Amazilia violiceps</i>	AMVI	VCHU	4391	C	Woody Upper Canopy
Hummingbird, White-eared	<i>Hylocharis leucotis</i>	HYLE	WEHU	4401	R	Shrub, Woody Lower Canopy
Ibis, Glossy	<i>Plegadis falcinellus</i>	PLFA	GLIB	1860	R	Ground, Shrub
Ibis, Scarlet	<i>Eudocimus ruber</i>	EURU	SCIB	1850	R	Woody Upper Canopy
Ibis, White	<i>Eudocimus albus</i>	EUAL	WHIB	1840	R	Woody Lower Canopy
Ibis, White-faced	<i>Plegadis chihi</i>	PLCH	WFIB	1870	R	Ground, Shrub
Jacana, Northern	<i>Jacana spinosa</i>	JASP	NOJA	2880	R	Floating
Jaeger, Long-tailed	<i>Stercorarius longicaudus</i>	STLO1	LTJA	0380	R	Ground
Jaeger, Parasitic	<i>Stercorarius parasiticus</i>	STPA	PAJA	0370	R	Ground
Jaeger, Pomarine	<i>Stercorarius pomarinus</i>	STPO	POJA	0360	R	Ground
Jay, Blue	<i>Cyanocitta cristata</i>	CYCR	BLJA	4770	R	Woody Lower Canopy
Jay, Brown	<i>Cyanocorax morio</i>	CYMO	BRJA	4832	R	Woody Lower Canopy, Shrub
Jay, Gray	<i>Perisoreus canadensis</i>	PECA	GRAJ	4840	R	Woody Lower Canopy
Jay, Gray-breasted	<i>Aphelocoma ultramarina</i>	APUL	GBJA	4820	R	Woody Lower Canopy
Jay, Green	<i>Cyanocorax yncas</i>	CYYN	GREJ	4830	R	Woody Lower Canopy, Shrub
Jay, Pinyon	<i>Gymnorhinus cyanocephalus</i>	GYCY	PIJA	4920	R	Woody Lower Canopy
Jay, Scrub	<i>Aphelocoma coerulescens</i>	APCO	SCJA	4810	R	Woody Lower Canopy, Shrub
Jay, Steller's	<i>Cyanocitta stelleri</i>	CYST	STJA	4780	R	Woody Lower Canopy
Junco, Dark-eyed	<i>Junco hyemalis</i>	JUHY	DEJU*	5670	B	Ground, Bank
Junco, Yellow-eyed	<i>Junco phaeonotus</i>	JUPH	YEJU	5700	R	Ground, Shrub
Kestrel, American	<i>Falco sparverius</i>	FASP	AMKE	3600	B	Snag, Cliff
Killdeer	<i>Charadrius vociferus</i>	CHVO	KILL	2730	B	Ground
Kingbird, Cassin's	<i>Tyrannus vociferans</i>	TYVO	CAKI	4480	A	Woody Upper Canopy
Kingbird, Couch's	<i>Tyrannus couchii</i>	TYCO	COKI	4461	C	Woody Lower Canopy
Kingbird, Eastern	<i>Tyrannus tyrannus</i>	TYTY	EAKI	4440	A	Woody Lower Canopy, Shrub
Kingbird, Gray	<i>Tyrannus dominicensis</i>	TYDO	GRAK	4450	D	Woody Lower Canopy, Shrub
Kingbird, Thick-billed	<i>Tyrannus crassirostris</i>	TYCR	TBKI	4451	C	Woody Upper Canopy
Kingbird, Tropical	<i>Tyrannus melancholicus</i>	TYME	TRKI	4460	C	Woody Lower Canopy
Kingbird, Western	<i>Tyrannus verticalis</i>	TYVE	WEKI	4470	A	Woody Upper Canopy, Shrub
Kingfisher, Belted	<i>Ceryle alcyon</i>	CEAL	BEKI	3900	B	Bank, Snag
Kingfisher, Green	<i>Chloroceryle americana</i>	CHAM	GKIN	3910	C	Bank
Kingfisher, Ringed	<i>Ceryle torquata</i>	GETO	RIKI	3901	R	Bank
Kinglet, Golden-crowned	<i>Regulus satrapa</i>	RESA	GCKI	7480	R	Woody Upper Canopy
Kinglet, Ruby-crowned	<i>Regulus calendula</i>	RECA	RCKI	7490	B	Woody Upper Canopy
Kiskadee, Great	<i>Pitangus sulphuratus</i>	PISU1	GKIS	4490	R	Woody Lower Canopy, Shrub
Kite, American Swallow-tailed	<i>Elanoides forficatus</i>	ELFO	ASTK	3270	A	Woody Upper Canopy
Kite, Black-shouldered	<i>Elanus caeruleus</i>	ELCA	BSKI	3280	R	Woody Upper Canopy
Kite, Hook-billed	<i>Chondrohierax uncinatus</i>	CHUN	HBKI	3271	R	Woody Lower Canopy
Kite, Mississippi	<i>Ictinia mississippiensis</i>	ICMI	MIKI	3290	A	Woody Upper Canopy
Kite, Snail	<i>Rostrhamus sociabilis</i>	ROSO	SNKI	3300	R	Woody Lower Canopy, Shrub
Kittiwake, Black-legged	<i>Rissa tridactyla</i>	RITR	BLKI	0400	R	Cliff
Kittiwake, Red-legged	<i>Rissa brevirostris</i>	RIBR	RLKI	0410	R	Cliff
Knot, Red	<i>Calidris canutus</i>	CACA	REKN	2340	R	Ground
Lark, Horned	<i>Eremophila alpestris</i>	ERAL	HOLA	4740	B	Ground
Limpkin	<i>Aramus guarauna</i>	ARGU	LIMP	2070	R	Ground, Shrub
Longspur, Chestnut-collared	<i>Calcarius ornatus</i>	CAOR	CCLO	5380	B	Ground
Longspur, Lapland	<i>Calcarius lapponicus</i>	CALA	LALO	5360	R	Ground

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
SERU	Cup	Nectar, Insects	Air	Hover Gleaner, Hawker	Forest, Shrubland
AMVI	Cup	Nectar, Insects	Air	Hover Gleaner	Forest, Riparian
HYLE	Cup	Nectar, Insects	Air	Hover Gleaner, Hawker	Forest, Shrubland
PLFA	Platform	Aquatic Inverts, Insects	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh
EURU	Platform	Aquatic Inverts, Fish	Water	Prober	Swamp/Marsh, Freshwater
EUAL	Platform	Aquatic Inverts, Fish	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh, Freshwater
PLCH	Platform	Aquatic Inverts, Insects	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh, Freshwater
JASP	Platform	Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Swamp/Marsh, Freshwater
STLO1	Scrape	Small Mammals, Birds	Ground, Air	Hover & Pounce, Piracy	Grassland, Tundra
STPA	Scrape	Birds, Small Mammals	Ground, Air	Hover & Pounce, Piracy	Shrubland, Tundra
STPO	Scrape	Small Mammals, Birds	Ground, Air	Low Patrol, Piracy	Swamp/Marsh, Tundra
CYCR	Cup	Insects, Seeds	Ground, Air	Ground Gleaner, Hawker	Forest, Urban
CYMO	Cup	Insects, Small Verts	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Forest Edge
PECA	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Forest Edge
APUL	Cup	Nuts	Ground	Ground Gleaner	Forest, Shrubland
CYYN	Cup	Insects, Small Verts	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Shrubland, Forest
GYCY	Cup	Nuts, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Forest
APCO	Cup	Insects, Nuts	Ground	Ground Gleaner	Shrubland, Forest
CYST	Cup	Nuts, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest
JUHY	Cup, Cavity	Seeds, Insects	Ground, Air	Ground Gleaner, Hawker	Forest, Forest Edge
JUPH	Cup, Cavity	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Shrubland
FASP	Cavity	Insects, Small Verts	Ground, Air	Hover & Pounce, Hawker	Grassland, Cropland
CHVO	Scrape	Insects	Ground	Ground Gleaner	Shoreline, Freshwater
TYVO	Cup	Insects, Fruit	Air, Ground	Hawker, Hover & Pounce	Forest, Shrubland
TYCO	Cup	Insects, Fruit	Air, Ground	Hawker	Riparian, Urban
TYTY	Cup	Insects, Fruit	Air	Hawker, Hover Gleaner	Riparian, Forest Edge
TYDO	Cup	Insects, Fruit	Air, Foliage	Hawker, Foliage Gleaner	Shoreline
TYCR	Cup	Insects	Air	Hawker	Riparian
TYME	Cup	Insects, Fruit	Air, Ground	Hawker, Hover & Pounce	Forest, Urban
TYVE	Cup	Insects, Fruit	Air, Ground	Hawker, Hover & Pounce	Grassland, Riparian
CEAL	Burrow, Cavity	Fish, Aquatic Inverts	Water	High Dives	Shoreline, Freshwater
CHAM	Burrow	Fish	Water	High Dives	Freshwater, Swamp/Marsh
CETO	Burrow	Fish	Water	High Dives	Freshwater
RESA	Pendant	Insects, Fruit	Bark, Air	Foliage Gleaner, Hover Gleaner	Forest
RECA	Pendant	Insects, Tree Sap	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest
PISU1	Sphere	Insects, Fish	Air, Water	Hawker, High Dives	Forest, Riparian
ELFO	Platform	Insects, Small Verts	Air, Ground	Hawker, Swooper	Forest, Swamp/Marsh
ELCA	Platform	Small Mammals, Insects	Ground	Hover & Pounce	Grassland, Riparian
CHUN	Platform	Aquatic Inverts, Insects	Ground, Bark	Swooper, Bark Gleaner	Swamp/Marsh, Forest
ICMI	Saucer	Insects, Small Verts	Air, Ground	Hawker, High Patrol	Riparian, Forest Edge
ROSO	Platform	Aquatic Inverts	Water	Low Patrol, Swooper	Swamp/Marsh, Freshwater
RITR	Cup	Fish, Aquatic Inverts	Water	Surface Dips, High Dives	Pelagic, Coastal
RIBR	Cup	Fish, Aquatic Inverts	Water	High Dives, Hover & Pick	Pelagic, Coastal
CACA	Scrape	Insects, Seeds	Ground	Ground Gleaner, Prober	Tundra
ERAL	Saucer	Seeds, Insects	Ground	Ground Gleaner	Grassland, Cropland
ARGU	Saucer	Aquatic Inverts	Water	Prober, Ambusher	Swamp/Marsh
CAOR	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland
CALA	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Shrubland

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Longspur, McCown's	<i>Calcarius mccownii</i>	CAMC	MCLO	5390	B	Ground
Longspur, Smith's	<i>Calcarius pictus</i>	CAPI	SMLO	5370	R	Ground
Loon, Arctic	<i>Gavia arctica</i>	GAAR	ARLO	0090	R	Ground
Loon, Common	<i>Gavia immer</i>	GAIM	COLO	0070	R	Ground
Loon, Pacific	<i>Gavia pacifica</i>	GAPA	PALO	0100	R	Ground
Loon, Red-throated	<i>Gavia stellata</i>	GAST2	RTLO	0110	R	Ground
Loon, Yellow-billed	<i>Gavia adamsii</i>	GAAD	YBLO	0080	R	Ground
Magpie, Black-billed	<i>Pica pica</i>	PIPI	BBMA	4750	R	Woody Upper Canopy, Shrub
Magpie, Yellow-billed	<i>Pica nuttalli</i>	PINU	YBMA	4760	R	Woody Upper Canopy
Mallard	<i>Anas platyrhynchos</i>	ANPL	MALL	1320	R	Ground
Martin, Purple	<i>Progne subis</i>	PRSU	PUMA	6110	A	Snag, MMS
Meadowlark, Eastern	<i>Sturnella magna</i>	STMA2	EAME	5010	B	Ground
Meadowlark, Western	<i>Sturnella neglecta</i>	STNE1	WEME	5011	B	Ground
Merganser, Common	<i>Mergus merganser</i>	MEME2	COME	1290	R	Woody Upper Canopy, Ground
Merganser, Hooded	<i>Lophodytes cucullatus</i>	LOCU1	HOME	1310	R	Snag, Woody Lower Canopy
Merganser, Red-breasted	<i>Mergus serrator</i>	MESE	RBME	1300	R	Ground
Merlin	<i>Falco columbarius</i>	FACO	MERL	3570	A	Woody Upper Canopy, Cliff
Mockingbird, Northern	<i>Mimus polyglottos</i>	MIPO	NOMO	7030	B	Shrub, Woody Lower Canopy
Moorhen, Common	<i>Gallinula chloropus</i>	GACH	COMO	2190	R	Floating, Ground
Murre, Common	<i>Uria aalge</i>	URAA	COMU	0300	R	Cliff
Murre, Thick-billed	<i>Uria lomvia</i>	URLO	TBMU	0310	R	Cliff
Murrelet, Ancient	<i>Synthliboramphus antiquus</i>	SYAN	ANMU	0210	R	Ground
Murrelet, Kittlitz's	<i>Brachyramphus brevirostris</i>	BRBR	KIMU	0240	R	Ground
Murrelet, Marbled	<i>Brachyramphus marmoratus</i>	BRMA	MAMU	0230	R	Ground, Woody Upper Canopy
Murrelet, Xantus'	<i>Synthliboramphus hypoleucus</i>	SYHY	XAMU	0250	R	Ground
Myna, Crested	<i>Acridotheres cristatellus</i>	ACCR	CRMY	4931	R	Woody Upper Canopy, MMS
Nighthawk, Antillean	<i>Chordeiles gundlachi</i>	CHGU	ANNI	4201	D	Ground
Nighthawk, Common	<i>Chordeiles minor</i>	CHMI	CONI	4200	A	Ground
Nighthawk, Lesser	<i>Chordeiles acutipennis</i>	CHAC	LENI	4210	A	Ground
Nightjar, Buff-collared	<i>Caprimulgus ridgwayi</i>	CARI	BCNI	4161	C	Ground
Noddy, Brown	<i>Anous stolidus</i>	ANST2	BRNO	0790	R	Shrub, Woody Lower Canopy
Nutcracker, Clark's	<i>Nucifraga columbiana</i>	NUCO	CLNU	4910	R	Woody Upper Canopy
Nuthatch, Brown-headed	<i>Sitta pusilla</i>	SIPU	BHNU	7290	R	Snag, Woody Lower Canopy
Nuthatch, Pygmy	<i>Sitta pygmaea</i>	SIPY	PYNU	7300	R	Woody Upper Canopy, Snag
Nuthatch, Red-breasted	<i>Sitta canadensis</i>	SICA1	RBNU	7280	R	Woody Upper Canopy
Nuthatch, White-breasted	<i>Sitta carolinensis</i>	SICA2	WBNU	7270	R	Woody Upper Canopy
Oldsquaw	<i>Clangula hyemalis</i>	CLHY	OLDS	1540	R	Ground
Oriole, Altamira	<i>Icterus gularis</i>	ICGU	ALOR	5031	R	Woody Upper Canopy
Oriole, Audubon's	<i>Icterus graduacauda</i>	ICGR	AUOR	5030	R	Woody Lower Canopy
Oriole, Hooded	<i>Icterus cucullatus</i>	ICCU	HOOR	5050	A	Woody Upper Canopy, Shrub
Oriole, Northern	<i>Icterus galbula</i>	ICGA	NOOR*	5070	A	Woody Upper Canopy
Oriole, Orchard	<i>Icterus spurius</i>	ICSP	OROR	5060	A	Woody Upper Canopy, Shrub
Oriole, Scott's	<i>Icterus parisorum</i>	ICPA	SCOR	5040	A	Woody Lower Canopy, Shrub
Oriole, Spot-breasted	<i>Icterus pectoralis</i>	ICPE	SPOO	5032	R	Woody Upper Canopy
Osprey	<i>Pandion haliaetus</i>	PAHA	OSPR	3640	R	Woody Upper Canopy, Cliff
Ovenbird	<i>Seiurus aurocapillus</i>	SEAU	OVEN	6740	A	Ground, Woody Lower Canopy
Owl, Barred	<i>Strix varia</i>	STVA	BAOW	3680	R	Snag, Woody Upper Canopy
Owl, Boreal	<i>Aegolius funereus</i>	AEFU	BOOW	3710	R	Snag, Woody Lower Canopy

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
CAMC	Cup	Seeds, Insects	Ground	Ground Gleaner	Grassland, Cropland
CAPI	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Tundra
GAAR	Platform	Fish, Insects	Water, Ground	Surface Dives, Ground Gleaner	Freshwater, Tundra
GAIM	Platform	Fish, Aquatic Inverts	Water	Surface Dives	Freshwater
GAPA	Platform	Fish, Insects	Water	Surface Dives	Tundra, Pelagic
GAST2	Saucer, Platform	Fish, Aquatic Inverts	Water	Surface Dives	Freshwater, Tundra
GAAD	Saucer	Fish, Aquatic Inverts	Water	Surface Dives	Freshwater, Tundra
PIPI	Sphere	Insects, Carrion	Ground	Ground Gleaner	Shrubland, Riparian
PINU	Sphere	Insects, Carrion	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Riparian
ANPL	Scrape	Seeds, Greens	Water	Dabbler	Freshwater, Swamp/Marsh
PRSU	Cavity	Insects	Air	Aerial Foraging	Grassland, Urban
STMA2	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Cropland
STNE1	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Cropland
MEME2	Cavity, Crevice	Fish, Aquatic Inverts	Water	Surface Dives	Freshwater, Riparian
LOCU1	Cavity	Fish, Aquatic Inverts	Water	Surface Dives	Freshwater, Swamp/Marsh
MESE	Scrape	Fish, Aquatic Inverts	Water	Surface Dives	Freshwater
FACO	Platform, Cavity	Birds, Small Mammals	Air	Aerial Pursuit, Hawker	Forest, Grassland
MIPO	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Urban
GACH	Platform, Cup	Greens, Aquatic Inverts	Water, Ground	Surface Dips, Ground Gleaner	Swamp/Marsh, Freshwater
URAA	None	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
URLO	None	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
SYAN	Burrow, Crevice	Aquatic Inverts, Fish	Water	Surface Dives	Coastal, Pelagic
BRBR	None	Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
BRMA	Saucer	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
SYHY	Crevice, Burrow	Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
ACCR	Cavity	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Grassland, Urban
CHGU	None	Insects	Air	Aerial Foraging	Grassland
CHMI	None	Insects	Air	Aerial Foraging	Grassland, Urban
CHAC	None	Insects	Air	Aerial Foraging	Shrubland, Shrubland
CARI	None	Insects	Air	Aerial Foraging	Shrubland, Forest
ANST2	Saucer	Fish	Water	Skimmer	Pelagic, Shoreline
NUCO	Cup	Nuts, Seeds	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest
SIPU	Cavity	Insects, Seeds	Bark, Air	Bark Gleaner, Hawker	Forest
SIPY	Cavity	Insects, Seeds	Bark, Air	Bark Gleaner, Hover Gleaner	Forest
SICA1	Cavity	Insects, Seeds	Bark, Air	Bark Gleaner, Hawker	Forest
SICA2	Cavity	Insects, Nuts	Bark	Bark Gleaner	Forest, Forest Edge
CLHY	Scrape	Aquatic Inverts, Fish	Water	Surface Dives	Coastal, Tundra
ICGU	Pendant	Insects, Fruit	Foliage	Foliage Gleaner	Forest, Shrubland
ICGR	Pendant	Insects, Fruit	Foliage	Foliage Gleaner	Shrubland, Riparian
ICCU	Pendant	Insects, Nectar	Foliage	Foliage Gleaner	Riparian, Shrubland
ICGA	Pendant	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Forest Edge, Urban
ICSP	Pendant	Insects, Fruit	Foliage	Foliage Gleaner	Shrubland, Forest
ICPA	Pendant	Insects, Fruit	Foliage	Foliage Gleaner	Shrubland, Riparian
ICPE	Pendant	Fruit, Nectar	Foliage	Foliage Gleaner	Forest, Shrubland
PAHA	Platform	Fish, Small Mammals	Water	High Dives	Freshwater
SEAU	Oven	Insects	Ground	Ground Gleaner	Forest
STVA	Cavity	Small Mammals, Birds	Ground	Low Patrol, Hover & Pounce	Forest, Swamp/Marsh
AEFU	Cavity	Small Mammals, Birds	Ground	Swooper	Forest, Swamp/Marsh

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Owl, Burrowing	<i>Athene cunicularia</i>	ATCU	BUOW	3780	A	Ground
Owl, Common Barn	<i>Tyto alba</i>	TYAL	COBO	3650	R	Snag, MMS
Owl, Eastern Screech	<i>Otus asio</i>	OTAS	EASO	3730	R	Snag, Woody Upper Canopy
Owl, Elf	<i>Micrathene whitneyi</i>	MIWH	ELOW	3810	C	Cactus, Woody Upper Canopy
Owl, Ferruginous Pygmy	<i>Glaucidium brasilianum</i>	GLBR	FEPO	3800	R	Snag, Woody Lower Canopy
Owl, Flammulated	<i>Otus flammeolus</i>	OTFL	FLOW	3740	A	Snag
Owl, Great Gray	<i>Strix nebulosa</i>	STNE	GGOW	3700	R	Woody Upper Canopy
Owl, Great Horned	<i>Bubo virginianus</i>	BUVI	GHOW	3750	R	Woody Upper Canopy, Cliff
Owl, Long-eared	<i>Asio otus</i>	ASOT	LEOW	3660	B	Woody Upper Canopy, Ground
Owl, Northern Hawk	<i>Surnia ulula</i>	SUUL	NOHO	3770	R	Snag, Woody Upper Canopy
Owl, Northern Pygmy	<i>Glaucidium gnoma</i>	GLGN	NOPO	3790	R	Snag, Woody Lower Canopy
Owl, Northern Saw-whet	<i>Aegolius acadicus</i>	AEAC	NSWO	3720	R	Snag, Woody Upper Canopy
Owl, Short-eared	<i>Asio flammeus</i>	ASFL	SEOW	3670	B	Ground
Owl, Snowy	<i>Nyctea scandiaca</i>	NYSC	SNOW	3760	R	Ground
Owl, Spotted	<i>Strix occidentalis</i>	STOC1	SPOW	3690	R	Woody Upper Canopy, Cliff
Owl, Western Screech	<i>Otus kennicotti</i>	OTKE	WESO	3732	R	Snag, Woody Upper Canopy
Owl, Whiskered Screech	<i>Otus trichopsis</i>	OTTR	WHSO	3731	R	Snag
Oystercatcher, American	<i>Haematopus palliatus</i>	HAPA	AMOY	2860	R	Ground
Oystercatcher, Black	<i>Haematopus bachmani</i>	HABA	BLOY	2870	R	Ground
Partridge, Gray	<i>Perdix perdix</i>	PEPE	GRPA*	2881	R	Ground
Parula, Northern	<i>Parula americana</i>	PAAM	NOPA	6480	A	Woody Upper Canopy
Parula, Tropical	<i>Parula pitiayumi</i>	PAPI	TRPA	6490	R	Woody Upper Canopy
Pauraque, Common	<i>Nyctidromus albigollis</i>	NYAL	COPA	4190	R	Ground
Pelican, American White	<i>Pelecanus erythrorhynchos</i>	PEER	AWPE	1250	R	Ground
Pelican, Brown	<i>Pelecanus occidentalis</i>	PEOC	BRPE	1260	R	Woody Upper Canopy, Cliff
Petrel, Ashy Storm	<i>Oceanodroma homochroa</i>	OCHO	ASSP	1080	R	Ground
Petrel, Black Storm	<i>Oceanodroma melania</i>	OCME	BLSP	1070	R	Ground, Cliff
Petrel, British Storm	<i>Hydrobates pelagicus</i>	HYPE	BHSP*	1040	R	Ground, Cliff
Petrel, Fork-tailed Storm	<i>Oceanodroma furcata</i>	OCFU	FTSP	1050	R	Cliff
Petrel, Leach's Storm	<i>Oceanodroma leucorhoa</i>	OCLE	LHSP	1060	R	Ground, Bank
Petrel, Least Storm	<i>Oceanodroma microsoma</i>	OCMI	LTSP	1030	R	Ground, Cliff
Petrel, Wilson's Storm	<i>Oceanites oceanicus</i>	OCOC	WISP	1090	R	Ground, Cliff
Pewee, Eastern Wood	<i>Contopus virens</i>	COVI1	EAWP	4610	A	Woody Upper Canopy
Pewee, Greater	<i>Contopus pertinax</i>	COPE	GRPE	4600	C	Woody Upper Canopy
Pewee, Western Wood	<i>Contopus sordidulus</i>	COSO	WEWP	4620	A	Woody Upper Canopy
Phainopepla	<i>Phainopepla nitens</i>	PHNI	PHAI	6200	A	Woody Upper Canopy, Shrub
Phalarope, Red	<i>Phalaropus fulicarius</i>	PHFU	REPH	2220	R	Ground
Phalarope, Red-necked	<i>Phalaropus lobatus</i>	PHLO	RNPH	2230	R	Ground
Phalarope, Wilson's	<i>Phalaropus tricolor</i>	PHTR	WIPH	2240	R	Ground
Pheasant, Ring-necked	<i>Phasianus colchicus</i>	PHCO	RNPS*	3091	R	Ground
Phoebe, Black	<i>Sayornis nigricans</i>	SANI	BLPH	4580	R	Cliff, MMS
Phoebe, Eastern	<i>Sayornis phoebe</i>	SAPH	EAPH	4560	B	MMS, Cliff
Phoebe, Say's	<i>Sayornis saya</i>	SASA	SAPH	4570	B	Cliff, MMS
Pigeon, Band-tailed	<i>Columba fasciata</i>	COFA	BTPI	3120	A	Woody Upper Canopy
Pigeon, Red-billed	<i>Columba flavirostris</i>	COFL1	RBPI	3130	R	Woody Upper Canopy
Pigeon, White-crowned	<i>Columba leucocephala</i>	COLE	WCPI	3140	D	Woody Lower Canopy
Pintail, Northern	<i>Anas acuta</i>	ANAC	NOPI	1430	R	Ground
Pipit, Red-throated	<i>Anthus cervinus</i>	ANCE	RTPI	6990	R	Ground

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
ATCU	Burrow	Insects, Small Mammals	Ground	Swooper, Hover & Pounce	Grassland, Urban
TYAL	Cavity	Small Mammals, Birds	Ground	Low Patrol, Swooper	Grassland, Urban
OTAS	Cavity	Insects, Small Verts	Ground	Swooper	Forest, Riparian
MIWH	Cavity	Insects	Ground	Low Patrol, Hover & Pounce	Desert, Shrubland
GLBR	Cavity	Insects, Small Verts	Ground	Swooper	Desert, Shrubland
OTFL	Cavity	Insects	Air, Bark	Hawker, Bark Gleaner	Forest
STNE	Abandoned	Small Mammals, Birds	Ground	Hover & Pounce, Swooper	Forest, Swamp/Marsh
BUVI	Abandoned	Small Mammals, Birds	Ground	Swooper	Forest, Swamp/Marsh
ASOT	Abandoned	Small Mammals, Birds	Ground	Low Patrol	Forest, Urban
SUUL	Cavity, Platform	Small Mammals, Birds	Ground	Swooper, Hover & Pounce	Forest, Swamp/Marsh
GLGN	Cavity	Small Mammals, Insects	Ground	Swooper	Forest
AEAC	Cavity	Small Mammals, Birds	Ground	Swooper	Forest, Swamp/Marsh
ASFL	Scrape	Small Mammals, Birds	Ground	Low Patrol, Swooper	Grassland, Swamp/Marsh
NYSC	Scrape	Small Mammals, Birds	Ground	Swooper	Tundra, Rocky Slope
STOC1	Cavity, Platform	Small Mammals, Birds	Ground	Swooper	Forest
OTKE	Cavity	Small Mammals, Insects	Ground	Swooper	Riparian, Shrubland
OTTR	Cavity	Insects	Ground	Swooper	Forest
HAPA	Scrape	Aquatic Inverts, Fish	Water	Prober	Coastal, Pelagic
HABA	Scrape	Aquatic Inverts, Fish	Water	Prober	Coastal, Pelagic
PEPE	Scrape	Seeds, Insects	Ground	Ground Gleaner	Grassland
PAAM	Pendant	Insects	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest
PAPI	Pendant	Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest
NYAL	None	Insects	Air	Aerial Foraging, Hawker	Forest, Forest Edge
PEER	Scrape	Fish, Aquatic Inverts	Water	Surface Dips	Coastal, Pelagic
PEOC	Saucer	Fish	Water	High Dives	Coastal, Pelagic
OCHO	Burrow, Crevice	Fish, Aquatic Inverts	Water	Low Patrol, Surface Dips	Coastal, Pelagic
OCME	Crevice	Aquatic Inverts, Carrion	Water	Scavenger, Low Patrol	Coastal, Pelagic
HYPE	Burrow, Crevice	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
OCFU	Burrow	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
OCLE	Burrow	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
OCMI	Burrow, Crevice	Greens, Aquatic Inverts	Water	Low Patrol	Coastal, Pelagic
OCOC	Burrow, Crevice	Greens, Fish	Water	Scavenger, Low Patrol	Coastal, Pelagic
COV11	Cup	Insects, Fruit	Air	Hawker, Hover Gleaner	Forest, Forest Edge
COPE	Cup	Insects	Air	Hawker	Forest
COSO	Cup	Insects, Fruit	Air	Hawker, Hover Gleaner	Forest, Forest Edge
PHNI	Cup	Fruit, Insects	Foliage, Air	Foliage Gleaner, Hawker	Shrubland, Riparian
PHFU	Scrape	Aquatic Inverts, Insects	Water	Surface Dips, Prober	Freshwater, Tundra
PHLO	Scrape	Aquatic Inverts, Seeds	Water	Surface Dips, Prober	Freshwater
PHTR	Scrape	Aquatic Inverts, Seeds	Water	Surface Dips, Prober	Swamp/Marsh
PHCO	Scrape	Insects, Seeds	Ground	Ground Gleaner	Grassland, Cropland
SANI	Cup	Insects, Fish	Air	Hawker, Hover Gleaner	Riparian, Urban
SAPH	Cup	Insects, Fish	Air	Hawker	Riparian, Urban
SASA	Cup	Insects, Fruit	Air	Hawker, Hover Gleaner	Grassland, Forest
COFA	Platform	Nuts, Fruit	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest
COFL1	Platform	Seeds, Nuts	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest, Riparian
COLE	Platform	Fruit	Foliage	Foliage Gleaner	Swamp/Marsh
ANAC	Scrape	Seeds, Greens	Water, Ground	Dabbler, Ground Gleaner	Swamp/Marsh, Freshwater
ANCE	Cup	Insects, Seeds	Ground	Ground Gleaner	Tundra, Rocky Slope

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Pipit, Sprague's	<i>Anthus spragueii</i>	ANSP1	SPPI	7000	B	Ground
Pipit, Water	<i>Anthus spinoletta</i>	ANSP	WAPI	6970	B	Ground
Plover, Black-bellied	<i>Pluvialis squatarola</i>	PLSQ	BBPL	2700	R	Ground
Plover, Common Ringed	<i>Charadrius hiaticula</i>	CHHI	CRPL	2750	R	Ground
Plover, Lesser Golden	<i>Pluvialis dominica</i>	PLDO1	LEGP	2720	R	Ground
Plover, Mongolian	<i>Charadrius mongolus</i>	CHMO	MOPL	2790	R	Ground
Plover, Mountain	<i>Charadrius montanus</i>	CHMO1	MOUP	2810	A	Ground
Plover, Piping	<i>Charadrius melodus</i>	CHME	PIPL	2770	R	Ground
Plover, Semipalmated	<i>Charadrius semipalmatus</i>	CHSE	SEPL	2740	R	Ground
Plover, Snowy	<i>Charadrius alexandrinus</i>	CHAL	SNPL	2780	R	Ground
Plover, Wilson's	<i>Charadrius wilsonia</i>	CHWI	WIPL	2800	R	Ground
Poor-will, Common	<i>Phalaenoptilus nuttallii</i>	PHNU	COPW	4180	B	Ground
Prairie-chicken, Greater	<i>Tympanuchus cupido</i>	TYCU	GRPC*	3050	R	Ground
Prairie-chicken, Lesser	<i>Tympanuchus pallidicinctus</i>	TYPAL	LEPC*	3070	R	Ground
Ptarmigan, Rock	<i>Lagopus mutus</i>	LAMU	ROPT*	3020	R	Ground
Ptarmigan, White-tailed	<i>Lagopus leucurus</i>	LALE	WTPT*	3040	R	Ground
Ptarmigan, Willow	<i>Lagopus lagopus</i>	LALA	WIPT*	3010	R	Ground
Puffin, Atlantic	<i>Fratercula arctica</i>	FRAR	ATPU	0130	R	Ground, Cliff
Puffin, Horned	<i>Fratercula corniculata</i>	FRCO	HOPU	0140	R	Ground, Cliff
Puffin, Tufted	<i>Fratercula cirrhata</i>	FRCI	TUPU	0120	R	Ground, Cliff
Pyrrhuloxia	<i>Cardinalis sinuatus</i>	CASI	PYRR	5940	R	Shrub, Woody Lower Canopy
Quail, California	<i>Callipepla californica</i>	CACA1	CAQU*	2940	R	Ground
Quail, Gambel's	<i>Callipepla gambelii</i>	CAGA1	GAQU*	2950	R	Ground
Quail, Montezuma	<i>Cyrtonyx montezumae</i>	CYMO1	MZQU*	2960	R	Ground
Quail, Mountain	<i>Oreortyx pictus</i>	ORPI	MNQU*	2920	R	Ground
Quail, Scaled	<i>Callipepla squamata</i>	CASQ	SCQU*	2930	R	Ground
Rail, Black	<i>Laterallus jamaicensis</i>	LAJA	BLRA	2160	R	Ground
Rail, Clapper	<i>Rallus longirostris</i>	RALO	CLRA	2110	R	Ground
Rail, King	<i>Rallus elegans</i>	RAEL	KIRA	2080	R	Ground
Rail, Virginia	<i>Rallus limicola</i>	RALI	VIRA	2120	R	Ground
Rail, Yellow	<i>Coturnicops noveboracensis</i>	CONO	YERA	2150	R	Ground
Raven, Chihuahuan	<i>Corvus cryptoleucus</i>	COCR1	CHRA	4870	R	Woody Upper Canopy, Shrub
Raven, Common	<i>Corvus corax</i>	COCO2	CORA	4860	R	Cliff, Woody Upper Canopy
Razorbill	<i>Alca torda</i>	ALTO	RAZO	0320	R	Cliff
Redhead	<i>Aythya americana</i>	AYAM	REDH	1460	R	Floating
Redpoll, Common	<i>Carduelis flammea</i>	CAFL	CORE	5280	R	Shrub, Ground
Redpoll, Hoary	<i>Carduelis hornemanni</i>	CAHO	HORE	5270	R	Shrub, Ground
Redstart, American	<i>Setophaga ruticilla</i>	SERU1	AMRE	6870	A	Woody Lower Canopy, Shrub
Redstart, Painted	<i>Myioborus pictus</i>	MYPI	PARE	6880	C	Ground, Bank
Roadrunner, Greater	<i>Geococcyx californianus</i>	GECA1	GRRO	3850	R	Woody Lower Canopy, Shrub
Robin, American	<i>Turdus migratorius</i>	TUMI	AMRO	7610	B	Woody Lower Canopy
Sanderling	<i>Calidris alba</i>	CAAL	SAND	2480	R	Ground
Sandpiper, Bairds	<i>Calidris bairdii</i>	CABA	BASA	2410	R	Ground
Sandpiper, Buff-breasted	<i>Tryngites subruficollis</i>	TRSU	BBSA	2620	R	Ground
Sandpiper, Curlew	<i>Calidris ferruginea</i>	CAFE	CUSA	2440	R	Ground
Sandpiper, Least	<i>Calidris minutilla</i>	CAMI1	LESA	2420	R	Ground
Sandpiper, Pectoral	<i>Calidris melanotos</i>	CAME1	PESA	2390	R	Ground
Sandpiper, Purple	<i>Calidris maritima</i>	CAMA	PUSA	2350	R	Ground



LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
ANSP1	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland
ANSP	Cup	Insects, Aquatic Inverts	Ground, Air	Ground Gleaner, Hawker	Shoreline, Tundra
PLSQ	Scrape	Insects	Ground, Water	Ground Gleaner, Prober	Coastal, Tundra
CHHI	Scrape	Insects	Ground, Water	Ground Gleaner, Prober	Coastal, Tundra
PLDO1	Scrape	Insects	Ground, Water	Ground Gleaner, Prober	Coastal, Tundra
CHMO	Scrape	Insects	Ground	Ground Gleaner	Coastal, Tundra
CHMO1	Scrape	Insects	Ground, Water	Ground Gleaner	Grassland
CHME	Scrape	Aquatic Inverts, Insects	Ground, Water	Ground Gleaner, Prober	Coastal, Freshwater
CHSE	Scrape	Aquatic Inverts, Insects	Ground, Water	Ground Gleaner	Coastal, Tundra
CHAL	Scrape	Insects, Aquatic Inverts	Ground, Water	Ground Gleaner, Prober	Coastal, Freshwater
CHWI	Scrape	Aquatic Inverts, Insects	Water	Prober	Coastal
PHNU	Scrape	Insects	Air	Aerial Foraging, Hover Gleaner	Shrubland
TYCU	Scrape	Seeds, Insects	Ground	Ground Gleaner	Grassland
TYPA	Scrape	Insects, Nuts	Ground	Ground Gleaner	Grassland
LAMU	Scrape	Greens, Fruit	Ground	Ground Gleaner	Rocky Slope, Tundra
LÁLE	Scrape	Greens, Insects	Ground	Ground Gleaner	Tundra
LALA	Scrape	Greens, Seeds	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Shrubland, Tundra
FRAR	Burrow, Crevice	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
FRCO	Burrow, Crevice	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
FRCI	Burrow, Crevice	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
CASI	Cup	Seeds, Insects	Ground	Ground Gleaner	Shrubland
CACA1	Scrape	Seeds, Nuts	Ground	Ground Gleaner	Shrubland, Cropland
CAGA1	Scrape	Seeds, Greens	Ground	Ground Gleaner, Foliage Browser	Shrubland, Riparian
CYMO1	Scrape	Greens, Insects	Ground	Digging, Ground Gleaner	Forest
ORPI	Scrape	Seeds, Insects	Ground	Ground Gleaner	Forest, Shrubland
CASQ	Scrape	Seeds, Greens	Ground	Ground Gleaner, Foliage Browser	Shrubland, Grassland
LAJA	Cup	Insects, Seeds	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh
RALO	Platform	Aquatic Inverts, Insects	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh
RAEL	Platform	Aquatic Inverts, Insects	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh
RALI	Saucer	Insects, Aquatic Inverts	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh
CONO	Saucer	Aquatic Inverts, Insects	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh, Freshwater
COCR1	Cup	Insects, Carrion	Ground	Scavenger, Ground Gleaner	Grassland, Shrubland
COÇO2	Cup	Carrion, Small Verts	Ground	Scavenger, Ground Gleaner	Forest, Grassland
ALTO	Crevice	Fish, Aquatic Inverts	Water	Surface Dives	Coastal, Pelagic
AYAM	Cup	Greens, Aquatic Inverts	Water	Surface Dives	Swamp/Marsh, Freshwater
CAFL	Cup, Crevice	Seeds, Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest, Tundra
CAHO	Cup, Crevice	Seeds, Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Shrubland, Tundra
SERU1	Cup	Insects, Seeds	Air, Foliage	Hover Gleaner, Foliage Gleaner	Forest, Forest Edge
MYPI	Cup	Insects	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Riparian
GECA1	Platform	Insects, Small Mammals	Ground	Ground Gleaner	Shrubland, Desert
TUMI	Cup	Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Urban
CAAL	Scrape	Insects, Greens	Water, Ground	Prober, Ground Gleaner	Coastal, Tundra
CABA	Scrape	Insects	Ground	Ground Gleaner	Shoreline, Tundra
TRSU	Scrape	Insects, Seeds	Ground	Ground Gleaner	Shoreline, Tundra
CAFE	Burrow, Scrape	Insects, Aquatic Inverts	Water	Prober	Coastal
CAMI1	Scrape	Insects, Aquatic Inverts	Ground, Water	Ground Gleaner, Prober	Coastal, Swamp/Marsh
CAME1	Scrape	Insects	Water, Ground	Prober, Ground Gleaner	Coastal, Tundra
CAMA	Scrape	Insects, Aquatic Inverts	Ground, Water	Ground Gleaner, Prober	Coastal, Tundra

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Sandpiper, Rock	<i>Calidris ptilocnemis</i>	CAPT	ROSA	2360	R	Ground
Sandpiper, Semipalmated	<i>Calidris pusilla</i>	CAPU	SESA	2460	R	Ground
Sandpiper, Solitary	<i>Tringa solitaria</i>	TRSO	SOSA	2560	R	Woody Upper Canopy
Sandpiper, Spotted	<i>Actitis macularia</i>	ACMA	SPSA	2630	R	Ground
Sandpiper, Stilt	<i>Calidris himantopus</i>	CAHI	STSA	2330	R	Ground
Sandpiper, Upland	<i>Bartramia longicauda</i>	BALO	UPSA	2610	A	Ground
Sandpiper, Western	<i>Calidris mauri</i>	CAMA1	WESA	2470	R	Ground
Sandpiper, White-rumped	<i>Calidris fuscicollis</i>	CAFU	WRSA	2400	R	Ground
Sandpiper, Wood	<i>Tringa glareola</i>	TRGL	WOSA*	2571	R	Ground, Woody Lower Canopy
Sapsucker, Red-breasted	<i>Sphyrapicus ruber</i>	SPRU	RBSA	4030	B	Woody Upper Canopy, Snag
Sapsucker, Red-naped	<i>Sphyrapicus nuchalis</i>	SPNU	RNSA	4021	B	Woody Lower Canopy
Sapsucker, Williamson's	<i>Sphyrapicus thyroideus</i>	SPTH	WISA	4040	B	Woody Upper Canopy
Sapsucker, Yellow-bellied	<i>Sphyrapicus varius</i>	SPVA1	YBSA	4020	B	Woody Upper Canopy
Scaup, Greater	<i>Aythya marila</i>	AYMA	GRSC	1480	R	Ground, Floating
Scaup, Lesser	<i>Aythya affinis</i>	AYAF	LESC	1490	R	Ground
Scoter, Black	<i>Melanitta nigra</i>	MENI	BLSC	1630	R	Ground
Scoter, Surf	<i>Melanitta perspicillata</i>	MEPE	SUSC	1660	R	Ground
Scoter, White-winged	<i>Melanitta fusca</i>	MEFU	WWSC	1650	R	Ground
Shearwater, Audubon's	<i>Puffinus lherminieri</i>	PULH	AUSH	0920	R	Ground, Cliff
Shearwater, Black-vented	<i>Puffinus opisthomelas</i>	PUOP	BVSH	0930	R	Ground, Cliff
Shearwater, Buller's	<i>Puffinus bulleri</i>	PUBU	BUSH	0962	R	Ground
Shearwater, Cory's	<i>Calonectris diomedea</i>	CADI	COSH	0880	R	Ground, Cliff
Shearwater, Greater	<i>Puffinus gravis</i>	PUGR	GRSH	0890	R	Ground
Shearwater, Manx	<i>Puffinus puffinus</i>	PUPU	MASH	0900	R	Cliff
Shearwater, Pink-footed	<i>Puffinus creatopus</i>	PUCR	PFSH	0910	R	Ground
Shearwater, Short-tailed	<i>Puffinus tenuirostris</i>	PUTE	SHOS	0960	R	Ground
Shearwater, Sooty	<i>Puffinus griseus</i>	PUGR1	SOSH	0950	R	Ground
Shoveler, Northern	<i>Anas clypeata</i>	ANCL	NSHO	1420	R	Ground
Shrike, Loggerhead	<i>Lanius ludovicianus</i>	LALU	LOSH	6220	B	Woody Lower Canopy, Shrub
Shrike, Northern	<i>Lanius excubitor</i>	LAEX	NSHR	6210	R	Woody Lower Canopy
Siskin, Pine	<i>Carduelis pinus</i>	CAP11	PISI	5330	B	Woody Upper Canopy
Skimmer, Black	<i>Rynchops niger</i>	RYNI	BLSK	0800	R	Ground
Skua, Great	<i>Catharacta skua</i>	CASK	GRSK	0350	R	Ground, Cliff
Skua, South Polar	<i>Catharacta maccormicki</i>	CAMA3	SPSK	0352	R	Ground, Cliff
Skylark, Eurasian	<i>Alauda arvensis</i>	ALAR	EUSK	4730	R	Ground
Snipe, Common	<i>Gallinago gallinago</i>	GAGA	COSN	2300	R	Ground
Solitaire, Townsend's	<i>Myadestes townsendi</i>	MYTO	TOSO	7540	B	Ground, Snag
Sora	<i>Porzana carolina</i>	POCA1	SORA	2140	R	Floating, Ground
Sparrow, American Tree	<i>Spizella arborea</i>	SPAR2	ATSP	5590	R	Ground, Shrub
Sparrow, Bachman's	<i>Aimophila aestivalis</i>	AIAE	BACS	5750	R	Ground
Sparrow, Baird's	<i>Ammodramus bairdii</i>	AMBA	BAIS	5450	A	Ground
Sparrow, Black-chinned	<i>Spizella atrogularis</i>	SPAT	BCSP	5650	A	Shrub, Woody Lower Canopy
Sparrow, Black-throated	<i>Amphispiza bilineata</i>	AMBI	BTSP	5730	B	Shrub, Cactus
Sparrow, Botteri's	<i>Aimophila botterii</i>	AIBO	BOSP	5760	C	Ground
Sparrow, Brewer's	<i>Spizella breweri</i>	SPBR1	BRSP	5620	A	Shrub, Woody Lower Canopy
Sparrow, Cassin's	<i>Aimophila cassinii</i>	AICA1	CASP	5780	B	Ground, Shrub
Sparrow, Chipping	<i>Spizella passerina</i>	SPPA2	CHSP	5600	A	Woody Lower Canopy
Sparrow, Clay-colored	<i>Spizella pallida</i>	SPPA1	CCSP	5610	A	Shrub, Ground

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
CAPT	Scrape	Insects, Aquatic Inverts	Water	Prober	Coastal
CAPU	Scrape	Insects, Aquatic Inverts	Ground, Water	Ground Gleaner, Prober	Tundra, Coastal
TRSO	Cup	Insects, Aquatic Inverts	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh, Freshwater
ACMA	Scrape	Insects, Aquatic Inverts	Ground	Ground Gleaner	Shoreline
CAHI	Scrape	Aquatic Inverts, Greens	Water	Prober	Tundra, Swamp/Marsh
BALO	Scrape	Insects, Seeds	Ground	Ground Gleaner	Grassland, Forest
CAMA1	Scrape	Insects, Aquatic Inverts	Ground, Water	Ground Gleaner, Prober	Coastal
CAFU	Scrape	Insects, Seeds	Ground, Water	Ground Gleaner, Prober	Tundra, Coastal
TRGL	Saucer	Insects	Water, Ground	Prober, Ground Gleaner	Coastal, Tundra
SPRU	Cavity	Insects, Tree Sap	Bark, Air	Bark Gleaner, Hawker	Forest
SPNU	Cavity	Insects, Tree Sap	Bark, Air	Bark Gleaner, Hawker	Forest, Riparian
SPTH	Cavity	Insects, Tree Sap	Bark, Ground	Bark Gleaner, Ground Gleaner	Forest
SPVA1	Cavity	Insects, Tree Sap	Bark, Air	Bark Gleaner, Hawker	Forest
AYMA	Scrape	Aquatic Inverts, Greens	Water	Surface Dives	Freshwater, Swamp/Marsh
AYAF	Scrape	Aquatic Inverts, Greens	Water	Surface Dives	Freshwater, Swamp/Marsh
MENI	Scrape	Aquatic Inverts, Greens	Water	Surface Dives	Freshwater, Swamp/Marsh
MEPE	Scrape	Aquatic Inverts, Greens	Water	Surface Dives	Freshwater, Swamp/Marsh
MEFU	Scrape	Aquatic Inverts, Greens	Water	Surface Dives	Freshwater
PULH	Burrow, Crevice	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
PUOP	Burrow	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
PUBU	Burrow	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
CADI	Burrow, Crevice	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
PUGR	Burrow	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
PUPU	Burrow	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
PUCR	Burrow	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
PUTE	Burrow	Fish	Water	Scavenger, Low Dives	Coastal, Pelagic
PUGR1	Burrow	Fish, Aquatic Inverts	Water	Scavenger, Low Patrol	Coastal, Pelagic
ANCL	Scrape	Greens, Aquatic Inverts	Water	Surface Dips	Swamp/Marsh
LALU	Cup	Insects, Small Verts	Ground, Air	Swooper, Aerial Pursuit	Shrubland, Forest
LAEX	Cup	Birds, Small Mammals	Ground, Air	Swooper, Aerial Pursuit	Forest, Shrubland
CAPI1	Saucer	Seeds, Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest, Urban
RYNI	Scrape	Fish, Aquatic Inverts	Water	Skimmer	Coastal, Pelagic
CASK	Scrape	Fish, Birds	Water, Air	Scavenger, Piracy	Coastal, Pelagic
CAMA3	Scrape	Fish, Birds	Water, Air	Scavenger, Piracy	Coastal, Pelagic
ALAR	Saucer	Seeds, Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Grassland
GAGA	Scrape	Insects	Water	Prober	Swamp/Marsh
MYTO	Cup, Cavity	Insects, Fruit	Air, Foliage	Hawker, Foliage Gleaner	Forest
POCA1	Saucer	Seeds, Insects	Ground, Water	Ground Gleaner, Prober	Swamp/Marsh
SPAR2	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Grassland, Shrubland
AIAE	Cup	Seeds, Insects	Ground	Ground Gleaner	Forest, Shrubland
AMBA	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland
SPAT	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland
AMBI	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland
AIBO	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Shrubland
SPBR1	Cup	Insects, Seeds	Ground	Ground Gleaner	Shrubland
AICA1	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Shrubland
SPPA2	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Forest Edge
SPPA1	Cup	Insects, Seeds	Ground	Ground Gleaner	Shrubland, Forest Edge

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Sparrow, Eurasian Tree	<i>Passer montanus</i>	PAMO1	ETSP	6883	R	Woody Upper Canopy
Sparrow, Field	<i>Spizella pusilla</i>	SPPU1	FISP	5630	R	Ground, Shrub
Sparrow, Five-striped	<i>Amphispiza quinquestriata</i>	AMQU	FSSP	5742	R	Shrub, Ground
Sparrow, Fox	<i>Passerella iliaca</i>	PAIL	FOSP	5850	B	Ground, Shrub
Sparrow, Golden-crowned	<i>Zonotrichia atricapilla</i>	ZOAT	GCSP	5570	R	Ground, Woody Lower Canopy
Sparrow, Grasshopper	<i>Ammodramus savannarum</i>	AMSA	GRSP	5460	A	Ground
Sparrow, Harris'	<i>Zonotrichia querula</i>	ZOQU	HASP	5530	R	Ground
Sparrow, Henslow's	<i>Ammodramus henslowii</i>	AMHE	HESP	5470	R	Ground
Sparrow, House	<i>Passer domesticus</i>	PADO1	HOSP	6882	R	MMS, Woody Upper Canopy
Sparrow, Lark	<i>Chondestes grammacus</i>	CHGR	LASP	5520	A	Ground, Shrub
Sparrow, Le Conte's	<i>Ammodramus leconteii</i>	AMLE	LCSP	5480	R	Ground
Sparrow, Lincoln's	<i>Melospiza lincolnii</i>	MELI	LISP	5830	A	Ground
Sparrow, Olive	<i>Arremonops rufivirgatus</i>	ARRU	OLSP	5860	R	Shrub, Cactus
Sparrow, Rufous-crowned	<i>Aimophila ruficeps</i>	AIRU	RCSP	5800	R	Ground, Shrub
Sparrow, Rufous-winged	<i>Aimophila carpalis</i>	AICA	RWSP	5790	R	Shrub, Cactus
Sparrow, Sage	<i>Amphispiza belli</i>	AMBE1	SAGS	5740	B	Shrub, Ground
Sparrow, Savannah	<i>Passerculus sandwichensis</i>	PASA	SAVS	5420	B	Ground
Sparrow, Seaside	<i>Ammodramus maritimus</i>	AMMA3	SESP	5500	R	Ground, Shrub
Sparrow, Sharp-tailed	<i>Ammodramus caudacutus</i>	AMCA1	STSP	5490	R	Ground, Shrub
Sparrow, Song	<i>Melospiza melodia</i>	MEME	SOSP	5810	B	Ground, Shrub
Sparrow, Swamp	<i>Melospiza georgiana</i>	MEGE	SWSP	5840	B	Shrub, Ground
Sparrow, Vesper	<i>Poocetes gramineus</i>	POGR1	VESP	5400	B	Ground
Sparrow, White-crowned	<i>Zonotrichia leucophrys</i>	ZOLE	WCSP	5540	B	Shrub, Ground
Sparrow, White-throated	<i>Zonotrichia albicollis</i>	ZOAL	WTSP	5580	B	Ground, Shrub
Spoonbill, Roseate	<i>Ajaia ajaja</i>	AJAJ	ROSP	1830	R	Woody Lower Canopy, Shrub
Starling, European	<i>Sturnus vulgaris</i>	STVU	EUST	4930	R	Woody Upper Canopy, MMS
Stilt, Black-necked	<i>Himantopus mexicanus</i>	HIME	BNST	2260	R	Ground
Stork, Wood	<i>Mycteria americana</i>	MYAM	WOST	1880	R	Woody Upper Canopy
Surfbird	<i>Aphriza virgata</i>	APVI	SURF	2820	R	Ground
Swallow, Bank	<i>Riparia riparia</i>	RIRI	BANS	6160	A	Bank
Swallow, Barn	<i>Hirundo rustica</i>	HIRU	BARS	6130	A	MMS
Swallow, Cave	<i>Hirundo fulva</i>	HIFU	CASW	6121	C	Cave, MMS
Swallow, Cliff	<i>Hirundo pyrrhonota</i>	HIPY	CLSW	6120	A	MMS, Cliff
Swallow, Northern Rough-winged	<i>Stelgidopteryx serripennis</i>	STSE	NRWS	6170	A	Bank, Cliff
Swallow, Tree	<i>Tachycineta bicolor</i>	TABI	TRES	6140	B	Snag, Woody Upper Canopy
Swallow, Violet-green	<i>Tachycineta thalassina</i>	TATH	VGSW	6150	A	Snag, Woody Upper Canopy
Swan, Mute	<i>Cygnus olor</i>	CYOL	MUSW	1782	R	Ground
Swan, Trumpeter	<i>Cygnus buccinator</i>	CYBU	TRUS	1810	R	Ground
Swan, Whistling	<i>Cygnus columbianus</i>	CYCO1	WHSW	1800	R	Ground
Swan, Whooper	<i>Cygnus cygnus</i>	CYCY	WHOS	1790	R	Ground
Swift, Black	<i>Cypseloides niger</i>	CYNI	BLSW	4220	A	Cliff
Swift, Chimney	<i>Chaetura pelagica</i>	CHPE	CHSW	4230	A	MMS, Woody Upper Canopy
Swift, Vaux's	<i>Chaetura vauxi</i>	CHVA	VASW	4240	A	Snag, MMS
Swift, White-throated	<i>Aeronautes saxatalis</i>	AESA	WTSW	4250	A	Cliff
Tanager, Hepatic	<i>Piranga flava</i>	PIFL	HETA	6090	A	Woody Upper Canopy
Tanager, Scarlet	<i>Piranga olivacea</i>	PIOL	SCTA	6080	A	Woody Upper Canopy
Tanager, Summer	<i>Piranga rubra</i>	PIRU	SUTA	6100	A	Woody Upper Canopy
Tanager, Western	<i>Piranga ludoviciana</i>	PILU	WETA	6070	A	Woody Upper Canopy

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
PAMO1	Cavity	Seeds, Insects	Ground	Ground Gleaner	Forest, Urban
SPPU1	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Forest Edge
AMQU	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Grassland
PAIL	Cup	Insects, Seeds	Ground	Ground Gleaner	Forest, Forest Edge
ZOAT	Cup	Insects, Seeds	Ground	Ground Gleaner	Shrubland
AMSA	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Cropland
ZOQU	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Forest
AMHE	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Shrubland
PADO1	Cavity, Sphere	Seeds, Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Urban, Cropland
CHGR	Cup	Seeds, Insects	Ground	Ground Gleaner	Grassland, Shrubland
AMLE	Cup	Insects, Seeds	Ground	Ground Gleaner	Swamp/Marsh
MELI	Cup	Insects, Seeds	Ground	Ground Gleaner	Swamp/Marsh, Riparian
ARRU	Sphere	Insects, Seeds	Ground	Ground Gleaner	Shrubland, Riparian
AIRU	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Grassland
AICA	Cup	Insects, Seeds	Foliage, Air	Foliage Gleaner, Hawker	Shrubland, Grassland
AMBE1	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland
PASA	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Swamp/Marsh
AMMA3	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Swamp/Marsh
AMCA1	Cup	Insects, Seeds	Ground	Ground Gleaner	Swamp/Marsh
MEME	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Riparian, Forest Edge
MEGE	Cup	Insects, Seeds	Ground	Ground Gleaner	Swamp/Marsh
POGR1	Cup	Insects, Seeds	Ground	Ground Gleaner	Grassland, Shrubland
ZOLE	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Urban
ZOAL	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Forest Edge
AJAJ	Platform	Fish, Aquatic Inverts	Water	Prober	Swamp/Marsh, Freshwater
STVU	Cavity	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Grassland, Urban
HIME	Scrape	Aquatic Inverts, Insects	Water, Ground	Prober, Ground Gleaner	Swamp/Marsh, Freshwater
MYAM	Platform	Fish, Aquatic Inverts	Water	Prober	Swamp/Marsh, Riparian
APVI	Scrape	Insects, Aquatic Inverts	Ground, Water	Ground Gleaner, Prober	Coastal
RIRI	Burrow	Insects	Air	Aerial Foraging	Freshwater, Grassland
HIRU	Cup	Insects, Fruit	Air	Aerial Foraging	Freshwater, Grassland
HIFU	Cup	Insects	Air	Aerial Foraging	Freshwater, Grassland
HIPY	Cup	Insects, Fruit	Air	Aerial Foraging	Freshwater, Grassland
STSE	Burrow, Crevice	Insects	Air	Aerial Foraging	Freshwater, Grassland
TABI	Cavity	Insects, Fruit	Air, Foliage	Aerial Foraging, Foliage Gleaner	Freshwater, Grassland
TATH	Cavity	Insects	Air	Aerial Foraging	Forest
CYOL	Platform	Greens, Aquatic Inverts	Water	Surface Dips, Dabbler	Freshwater, Swamp/Marsh
CYBU	Platform	Greens, Aquatic Inverts	Water	Surface Dips, Dabbler	Freshwater, Swamp/Marsh
CYCO1	Platform	Greens, Aquatic Inverts	Water	Surface Dips, Dabbler	Freshwater, Tundra
CYCY	Platform	Greens, Aquatic Inverts	Water	Surface Dips, Dabbler	Coastal, Tundra
CYNI	Saucer	Insects	Air	Aerial Foraging	Rocky Slope, Shoreline
CHPE	Saucer	Insects	Air	Aerial Foraging	Forest, Urban
CHVA	Saucer	Insects	Air	Aerial Foraging	Forest
AESA	Crevice	Insects	Air	Aerial Foraging	Rocky Slope, Shoreline
PIFL	Saucer	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Forest, Riparian
PIOL	Saucer	Insects, Fruit	Air, Foliage	Hover Gleaner, Foliage Gleaner	Forest
PIRU	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Forest, Riparian
PILU	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Forest

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Tattler, Wandering	<i>Heteroscelus incanus</i>	HEIN	WATA	2590	R	Ground
Teal, Blue-winged	<i>Anas discors</i>	ANDI	BWTE	1400	R	Ground
Teal, Cinnamon	<i>Anas cyanoptera</i>	ANCY	CITE	1410	R	Ground
Teal, Green-winged	<i>Anas crecca</i>	ANCR	AGWT	1390	R	Ground
Tern, Aleutian	<i>Sterna aleutica</i>	STAL1	ALTE	0730	R	Ground
Tern, Arctic	<i>Sterna paradisaea</i>	STPA1	ARTE	0710	R	Ground
Tern, Black	<i>Chlidonias niger</i>	CHNI	BLTE	0770	R	Floating, Ground
Tern, Caspian	<i>Sterna caspia</i>	STCA1	CATE	0640	R	Ground
Tern, Common	<i>Sterna hirundo</i>	STHI	COTE	0700	R	Ground
Tern, Elegant	<i>Sterna elegans</i>	STEL	ELTE	0660	R	Ground
Tern, Forster's	<i>Sterna forsteri</i>	STFO	FOTE	0690	R	Floating, Ground
Tern, Gull-billed	<i>Sterna nilotica</i>	STNI	GBTE	0630	R	Ground, Floating
Tern, Least	<i>Sterna antillarum</i>	STAN1	LETE	0740	R	Ground
Tern, Roseate	<i>Sterna dougallii</i>	STDO	ROST	0720	R	Ground
Tern, Royal	<i>Sterna maxima</i>	STMA1	ROYT	0650	R	Ground
Tern, Sandwich	<i>Sterna sandvicensis</i>	STSA	SATE	0670	R	Ground
Tern, Sooty	<i>Sterna fuscata</i>	STFU	SOTE	0750	R	Ground
Thrasher, Bendire's	<i>Toxostoma bendirei</i>	TOBE	BETH	7080	B	Shrub, Woody Lower Canopy
Thrasher, Brown	<i>Toxostoma rufum</i>	TORU	BRTH	7050	R	Shrub, Woody Lower Canopy
Thrasher, California	<i>Toxostoma redivivum</i>	TORE	CATH	7100	R	Shrub, Woody Lower Canopy
Thrasher, Crissal	<i>Toxostoma dorsale</i>	TODO	CRTH	7120	R	Shrub, Woody Lower Canopy
Thrasher, Curve-billed	<i>Toxostoma curvirostre</i>	TOCU	CBTH	7070	R	Shrub, Woody Lower Canopy
Thrasher, Le Conte's	<i>Toxostoma lecontei</i>	TOLE	LCTH	7110	R	Shrub, Woody Lower Canopy
Thrasher, Long-billed	<i>Toxostoma longirostre</i>	TOLO	LBTH	7060	R	Shrub, Woody Lower Canopy
Thrasher, Sage	<i>Oreoscoptes montanus</i>	ORMO	SATH	7020	B	Shrub, Ground
Thrush, Gray-cheeked	<i>Catharus minimus</i>	CAMI2	GCTH	7570	A	Shrub, Woody Lower Canopy
Thrush, Hermit	<i>Catharus guttatus</i>	CAGU	HETH	7590	B	Ground, Woody Lower Canopy
Thrush, Swainson's	<i>Catharus ustulatus</i>	CAUS	SWTH	7580	A	Shrub, Woody Lower Canopy
Thrush, Varied	<i>Ixoreus naevius</i>	IXNA	VATH	7630	R	Woody Lower Canopy
Thrush, Wood	<i>Hylocichla mustelina</i>	HYMU	WOTH	7550	A	Woody Upper Canopy
Tit, Siberian	<i>Parus cinctus</i>	PACI	SITI	7390	R	Snag, Woody Lower Canopy
Titmouse, Bridled	<i>Parus wollweberi</i>	PAWO	BRTI	7340	R	Woody Lower Canopy, Snag
Titmouse, Plain	<i>Parus inornatus</i>	PAIN	PLTI	7330	R	Woody Lower Canopy, Snag
Titmouse, Tufted	<i>Parus bicolor</i>	PABI	TUTI*	7310	R	Woody Upper Canopy, Snag
Towhee, Abert's	<i>Pipilo aberti</i>	PIAB	ABTO	5920	R	Shrub, Woody Lower Canopy
Towhee, Brown	<i>Pipilo fuscus</i>	PIFU	BRTO	5910	R	Shrub, Woody Lower Canopy
Towhee, Green-tailed	<i>Pipilo chlorurus</i>	PICH	GTTO	5900	A	Shrub, Ground
Towhee, Rufous-sided	<i>Pipilo erythrophthalmus</i>	PIER	RSTO	5870	B	Ground, Shrub
Trogon, Elegant	<i>Trogon elegans</i>	TREL	ELTR	3890	C	Snag, Bank
Tropicbird, Red-billed	<i>Phaethon aethereus</i>	PHAE	RBTR	1130	R	Ground, Cliff
Tropicbird, White-tailed	<i>Phaethon lepturus</i>	PHLE	WTTR	1120	R	Ground, Cliff
Turkey, Wild	<i>Meleagris gallopavo</i>	MEGA	WITU*	3100	R	Ground
Turnstone, Black	<i>Arenaria melanocephala</i>	ARME	BLTU	2840	R	Ground
Turnstone, Ruddy	<i>Arenaria interpres</i>	ARIN	RUTU	2830	R	Ground
Tyrannulet, Beardless	Northern <i>Camptostoma imberbe</i>	CAIM	NBTY	4720	C	Woody Upper Canopy
Veery	<i>Catharus fuscescens</i>	CAFU2	VEER	7560	A	Ground, Shrub
Verdin	<i>Auriparus flaviceps</i>	AUFL	VERD	7460	R	Shrub, Cactus
Vireo, Bell's	<i>Vireo bellii</i>	VIBE	BEVI	6330	A	Shrub, Woody Lower Canopy

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
HEIN	Scrape	Insects, Aquatic Inverts	Water	Prober	Freshwater, Riparian
ANDI	Scrape	Seeds, Greens	Water	Surface Dips, Dabbler	Freshwater, Swamp/Marsh
ANCY	Scrape	Seeds, Insects	Water	Surface Dips, Dabbler	Swamp/Marsh, Freshwater
ANCR	Scrape	Seeds, Aquatic Inverts	Ground, Water	Ground Gleaner, Dabbler	Swamp/Marsh, Freshwater
STAL1	Scrape	Fish, Aquatic Inverts	Water	High Dives	Coastal, Pelagic
STPA1	Scrape	Fish, Aquatic Inverts	Water	High Dives	Tundra, Coastal
CHNI	Platform, Scrape	Insects, Aquatic Inverts	Air, Water	Hawker, Skimmer	Swamp/Marsh
STCA1	Scrape	Fish, Aquatic Inverts	Water	High Dives	Coastal, Freshwater
STHI	Scrape	Fish, Aquatic Inverts	Water	High Dives	Coastal, Tundra
STEL	Scrape	Fish	Water	Scavenger, High Dives	Coastal, Pelagic
STFO	Platform, Saucer	Fish, Insects	Water, Air	High Dives, Aerial Foraging	Swamp/Marsh
STNI	Scrape	Insects, Aquatic Inverts	Air, Ground	Hawker, Hover & Pounce	Shoreline, Pelagic
STAN1	Scrape	Fish, Aquatic Inverts	Water	High Dives, Skimmer	Coastal, Freshwater
STDO	Scrape	Fish, Aquatic Inverts	Water	High Dives	Coastal, Freshwater
STMA1	Scrape	Fish, Aquatic Inverts	Water	High Dives, Skimmer	Coastal
STSA	Scrape	Fish, Aquatic Inverts	Water	High Dives, Skimmer	Coastal
STFU	Scrape	Fish, Aquatic Inverts	Water	Hover & Pick	Coastal, Freshwater
TOBE	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland
TORU	Cup	Insects, Small Verts	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Forest Edge
TORE	Cup	Insects, Fruit	Ground, Foliage	Digging, Foliage Gleaner	Shrubland, Riparian
TODO	Cup	Insects, Fruit	Ground	Digging	Shrubland, Riparian
TOCU	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland
TOLE	Cup	Insects, Small Verts	Ground, Foliage	Digging, Foliage Gleaner	Shrubland
TOLO	Cup	Insects, Small Verts	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Shrubland, Riparian
ORMO	Cup	Insects, Fruit	Ground	Ground Gleaner	Shrubland
CAM12	Cup	Insects, Fruit	Ground	Ground Gleaner	Forest Edge, Riparian
CAGU	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Forest Edge
CAUS	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Forest, Forest Edge
IXNA	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest
HYMU	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Riparian
PACI	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Riparian
PAWO	Cavity	Insects	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Shrubland
PAIN	Cavity	Insects, Fruit	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest
PABI	Cavity	Insects, Seeds	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Shrubland
PIAB	Cup	Seeds, Insects	Ground	Ground Gleaner	Shrubland, Riparian
PIFU	Cup	Seeds, Insects	Ground	Ground Gleaner	Shrubland, Riparian
PICH	Cup	Insects, Seeds	Ground	Ground Gleaner	Shrubland, Riparian
PIER	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest Edge, Shrubland
TREL	Cavity	Insects, Fruit	Air	Hawker, Hover Gleaner	Forest, Shrubland
PHAE	Burrow, Crevice	Fish, Aquatic Inverts	Water	High Dives	Coastal, Pelagic
PHLE	Burrow, Crevice	Fish, Aquatic Inverts	Water	High Dives	Coastal, Pelagic
MEGA	Scrape	Seeds, Insects	Ground	Ground Gleaner	Forest, Riparian
ARME	Scrape	Aquatic Inverts, Fruit	Ground	Ground Gleaner	Shoreline, Tundra
ARIN	Scrape	Insects, Aquatic Inverts	Ground, Water	Ground Gleaner, Prober	Coastal, Tundra
CAIM	Sphere	Insects, Fruit	Air	Hawker	Riparian, Forest
CAFU2	Cup	Insects, Fruit	Ground	Ground Gleaner, Swooper	Forest
AUFL	Sphere	Insects, Fruit	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Shrubland
VIBE	Cup	Insects, Fruit	Foliage	Foliage Gleaner	Riparian, Shrubland

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Vireo, Black-capped	<i>Vireo atricapillus</i>	VIAT	BCVI	6300	A	Woody Lower Canopy
Vireo, Black-whiskered	<i>Vireo altiloquus</i>	VIAL	BWVI	6230	D	Woody Lower Canopy
Vireo, Gray	<i>Vireo vicinior</i>	VIVI	GRVI	6340	A	Shrub, Woody Lower Canopy
Vireo, Hutton's	<i>Vireo huttoni</i>	VIHU	HUVI	6320	R	Woody Lower Canopy
Vireo, Philadelphia	<i>Vireo philadelphicus</i>	VIPH	PHVI	6260	A	Woody Upper Canopy
Vireo, Red-eyed	<i>Vireo olivaceus</i>	VIOL	REVI	6240	A	Shrub, Woody Upper Canopy
Vireo, Solitary	<i>Vireo solitarius</i>	VISO	SOVI	6290	A	Woody Lower Canopy
Vireo, Warbling	<i>Vireo gilvus</i>	VIGI	WAVI	6270	A	Woody Upper Canopy, Shrub
Vireo, White-eyed	<i>Vireo griseus</i>	VIGR	WEVI	6310	A	Shrub, Woody Lower Canopy
Vireo, Yellow-throated	<i>Vireo flavifrons</i>	VIFL	YTVI	6280	A	Woody Upper Canopy
Vulture, Black	<i>Coragyps atratus</i>	COAT	BLVU	3260	R	Cliff, Ground
Vulture, Turkey	<i>Cathartes aura</i>	CAAU	TUVU	3250	B	Cliff, Snag
Wagtail, White	<i>Motacilla alba</i>	MOAL	WHWA	6940	R	Bank, Cliff
Wagtail, Yellow	<i>Motacilla flava</i>	MOFL	YWAG	6960	R	Ground
Warbler, Arctic	<i>Phylloscopus borealis</i>	PHBO	ARWA	7470	R	Ground
Warbler, Bachman's	<i>Vermivora bachmanii</i>	VEBA	BAWA	6400	A	Vine Tangle, Woody Lower Canopy
Warbler, Bay-breasted	<i>Dendroica castanea</i>	DECA2	BBWA	6600	A	Woody Upper Canopy
Warbler, Black-and-white	<i>Mniotilta varia</i>	MNVA	BAWW	6360	A	Ground, Woody Lower Canopy
Warbler, Black-throated Blue	<i>Dendroica caerulescens</i>	DECA1	BTBW	6540	A	Shrub, Woody Lower Canopy
Warbler, Black-throated Gray	<i>Dendroica nigrescens</i>	DENI	BTYW	6650	A	Woody Upper Canopy
Warbler, Black-throated Green	<i>Dendroica virens</i>	DEVI	BTNW	6670	A	Woody Upper Canopy
Warbler, Blackburnian	<i>Dendroica fusca</i>	DEFU	BLBW	6620	A	Woody Upper Canopy
Warbler, Blackpoll	<i>Dendroica striata</i>	DEST	BLPW	6610	A	Woody Lower Canopy
Warbler, Blue-winged	<i>Vermivora pinus</i>	VEPI	BWWA	6410	A	Ground, Vine Tangle
Warbler, Canada	<i>Wilsonia canadensis</i>	WICA	CAWA	6860	A	Ground
Warbler, Cape May	<i>Dendroica tigrina</i>	DETI	CMWA	6500	A	Woody Upper Canopy
Warbler, Cerulean	<i>Dendroica cerulea</i>	DECE	CERW	6580	A	Woody Upper Canopy
Warbler, Chestnut-sided	<i>Dendroica pensylvanica</i>	DEPE	CSWA	6590	A	Shrub, Woody Lower Canopy
Warbler, Colima	<i>Vermivora crissalis</i>	VECR	COLW	6471	C	Ground
Warbler, Connecticut	<i>Oporornis agilis</i>	OPAG	CONW	6780	A	Ground, Shrub
Warbler, Golden-cheeked	<i>Dendroica chrysoparia</i>	DECH	GCWA	6660	A	Woody Lower Canopy
Warbler, Golden-winged	<i>Vermivora chrysoptera</i>	VECH	GWWA	6420	A	Ground
Warbler, Grace's	<i>Dendroica graciae</i>	DEGR	GRWA	6640	A	Woody Upper Canopy
Warbler, Hermit	<i>Dendroica occidentalis</i>	DEOC	HEWA	6690	A	Woody Upper Canopy
Warbler, Hooded	<i>Wilsonia citrina</i>	WICI	HOWA	6840	A	Shrub, Woody Lower Canopy
Warbler, Kentucky	<i>Oporornis formosus</i>	OPFO	KEWA	6770	A	Ground, Shrub
Warbler, Kirtland's	<i>Dendroica kirtlandii</i>	DEKI	KIWA	6700	A	Ground
Warbler, Lucy's	<i>Vermivora luciae</i>	VELU	LUWA	6430	C	Snag, Woody Lower Canopy
Warbler, MacGillivray's	<i>Oporornis tolmiei</i>	OPTO	MGWA	6800	A	Shrub, Woody Lower Canopy
Warbler, Magnolia	<i>Dendroica magnolia</i>	DEMA	MAWA	6570	A	Woody Lower Canopy, Shrub
Warbler, Mourning	<i>Oporornis philadelphia</i>	OPPH	MOWA	6790	A	Ground, Shrub
Warbler, Nashville	<i>Vermivora ruficapilla</i>	VERU	NAWA	6450	A	Ground
Warbler, Olive	<i>Peucedramus taeniatus</i>	PETA	OLWA	6510	C	Woody Upper Canopy
Warbler, Orange-crowned	<i>Vermivora celata</i>	VECE	OCWA	6460	A	Ground, Woody Lower Canopy
Warbler, Palm	<i>Dendroica palmarum</i>	DEPA	PAWA*	6720	A	Ground, Woody Lower Canopy
Warbler, Pine	<i>Dendroica pinus</i>	DEPI	PIWA	6710	R	Woody Upper Canopy
Warbler, Prairie	<i>Dendroica discolor</i>	DEDI	PRAW	6730	A	Shrub, Woody Lower Canopy
Warbler, Prothonotary	<i>Protonotaria citrea</i>	PRCI	PROW	6370	A	Snag, Woody Lower Canopy



LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
VIAT	Cup	Insects, Seeds	Foliage	Foliage Gleaner	Forest, Shrubland
VIAL	Cup	Insects, Fruit	Foliage	Foliage Gleaner	Swamp/Marsh
VIVI	Cup	Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Shrubland, Forest
VIHU	Cup	Insects, Fruit	Foliage	Foliage Gleaner	Forest
VIPH	Cup	Insects, Fruit	Air, Foliage	Hover Gleaner, Foliage Gleaner	Forest
VIOL	Cup	Insects, Fruit	Air, Foliage	Hover Gleaner, Foliage Gleaner	Forest, Urban
VISO	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Forest
VIGI	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest, Riparian
VIGR	Cup	Insects, Fruit	Foliage	Foliage Gleaner	Shrubland, Riparian
VIFL	Cup	Insects, Fruit	Foliage	Foliage Gleaner	Forest, Forest Edge
COAT	None	Carrion, Small Verts	Ground	Scavenger, High Patrol	Grassland, Shrubland
CAAU	None	Carrion	Ground	Scavenger, High Patrol	Grassland, Shrubland
MOAL	Crevice	Insects, Aquatic Inverts	Ground, Air	Ground Gleaner, Hawker	Shoreline, Tundra
MOFL	Cup	Insects, Aquatic Inverts	Ground, Air	Ground Gleaner, Hawker	Shoreline, Tundra
PHBO	Oven	Insects	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest, Shrubland
VEBA	Cup	Insects	Foliage	Foliage Gleaner	Swamp/Marsh
DECA2	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Forest, Shrubland
MNVA	Cup	Insects	Bark, Air	Bark Gleaner, Hawker	Forest
DECA1	Cup	Insects, Seeds	Air, Foliage	Hover Gleaner, Foliage Gleaner	Forest
DENI	Cup	Insects	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest, Shrubland
DEVI	Cup	Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest
DEFU	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest
DEST	Cup	Insects, Fruit	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest
VEPI	Cup	Insects	Foliage	Foliage Gleaner	Shrubland, Riparian
WICA	Cup	Insects	Air, Foliage	Hover Gleaner, Foliage Gleaner	Forest, Riparian
DETI	Cup	Insects, Nectar	Foliage, Air	Foliage Gleaner, Hawker	Forest, Forest Edge
DECE	Cup	Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest
DEPE	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Shrubland, Forest
VECR	Cup	Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest
OPAG	Cup	Insects, Seeds	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Swamp/Marsh, Forest
DECH	Cup	Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest
VECH	Cup	Insects	Foliage	Foliage Gleaner	Grassland, Shrubland
DEGR	Cup	Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest
DEOC	Cup	Insects	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest
WICI	Cup	Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest, Riparian
OPFO	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest
DEKI	Cup	Insects, Tree Sap	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest
VELU	Cavity	Insects	Foliage, Air	Foliage Gleaner, Hawker	Shrubland, Forest
OPTO	Cup	Insects	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Riparian, Forest Edge
DEMA	Cup	Insects, Nectar	Air, Bark	Hover Gleaner, Bark Gleaner	Forest
OPPH	Cup	Insects	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest, Swamp/Marsh
VERU	Cup	Insects	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest, Riparian
PETA	Cup	Insects	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Forest
VECE	Cup	Insects, Fruit	Foliage	Foliage Gleaner	Forest, Riparian
DEPA	Cup	Insects, Fruit	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest
DEPI	Cup	Insects, Seeds	Bark, Foliage	Bark Gleaner, Foliage Gleaner	Forest
DEDI	Cup	Insects	Foliage, Air	Foliage Gleaner, Hawker	Shrubland, Forest Edge
PRCI	Cavity	Insects, Aquatic Inverts	Bark, Foliage	Bark Gleaner, Foliage Gleaner	Swamp/Marsh, Riparian

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Warbler, Red-faced	<i>Cardellina rubrifrons</i>	CARU2	RFWA	6900	C	Ground
Warbler, Rufous-capped	<i>Basileuterus rufifrons</i>	BARU	RCWA	6921	R	Ground
Warbler, Swainson's	<i>Limnothlypis swainsonii</i>	LISW	SWWA	6380	A	Shrub, Woody Lower Canopy
Warbler, Tennessee	<i>Vermivora peregrina</i>	VEPE	TEWA	6470	A	Ground
Warbler, Townsend's	<i>Dendroica townsendi</i>	DETO	TOWA	6680	A	Woody Lower Canopy
Warbler, Virginia's	<i>Vermivora virginiae</i>	VEVI	VIWA	6440	A	Ground
Warbler, Wilson's	<i>Wilsonia pusilla</i>	WIPU	WIWA	6850	A	Ground, Vine Tangle
Warbler, Worm-eating	<i>Helmitheros vermivorus</i>	HEVE	WEWA	6390	A	Ground
Warbler, Yellow	<i>Dendroica petechia</i>	DEPE1	YWAR	6520	A	Shrub, Woody Lower Canopy
Warbler, Yellow-rumped	<i>Dendroica coronata</i>	DECO	YRWA*	6550	B	Woody Upper Canopy
Warbler, Yellow-throated	<i>Dendroica dominica</i>	DEDO	YTWA	6630	A	Woody Upper Canopy
Waterthrush, Louisiana	<i>Seiurus motacilla</i>	SEMO	LOWA	6760	A	Ground, Bank
Waterthrush, Northern	<i>Seiurus noveboracensis</i>	SENO	NOWA	6750	A	Ground, Bank
Waxwing, Bohemian	<i>Bombycilla garrulus</i>	BOGA	BOWA	6180	R	Woody Upper Canopy
Waxwing, Cedar	<i>Bombycilla cedrorum</i>	BOCE	CEDW	6190	B	Woody Upper Canopy
Wheatear, Northern	<i>Oenanthe oenanthe</i>	OEOE	NOWH	7650	R	Ground
Whimbrel	<i>Numenius phaeopus</i>	NUPH	WHIM	2650	R	Ground
Whip-poor-will	<i>Caprimulgus vociferus</i>	CAVO	WPWI	4170	A	Ground
Wigeon, American	<i>Anas americana</i>	ANAM	AMWI	1370	R	Ground
Wigeon, Eurasian	<i>Anas penelope</i>	ANPE	EUWI	1360	R	Ground
Willet	<i>Catoptrophorus semipalmatus</i>	CASE	WILL	2580	R	Ground
Woodcock, American	<i>Scolopax minor</i>	SCMI	AMWO	2280	R	Ground
Woodpecker, Acorn	<i>Melanerpes formicivorus</i>	MEFO	ACWO	4070	R	Snag, Woody Upper Canopy
Woodpecker, Black-backed	<i>Picoides arcticus</i>	PIAR	BBWO	4000	R	Snag
Woodpecker, Downy	<i>Picoides pubescens</i>	PIPU	DOWO	3940	R	Snag, Woody Upper Canopy
Woodpecker, Gila	<i>Melanerpes uropygialis</i>	MEUR	GIWO	4110	R	Cactus, Woody Upper Canopy
Woodpecker, Golden-fronted	<i>Melanerpes aurifrons</i>	MEAU	GFOW	4100	R	Snag, Woody Upper Canopy
Woodpecker, Hairy	<i>Picoides villosus</i>	PIVI	HAWO	3930	R	Woody Upper Canopy, Snag
Woodpecker, Ivory-billed	<i>Campephilus principalis</i>	CAPR	IBWO	3920	R	Snag, Woody Upper Canopy
Woodpecker, Ladder-backed	<i>Picoides scalaris</i>	PISC	LBWO	3960	R	Woody Lower Canopy, Shrub
Woodpecker, Lewis'	<i>Melanerpes lewis</i>	MELE	LEWO	4080	B	Woody Upper Canopy, Snag
Woodpecker, Nuttall's	<i>Picoides nuttallii</i>	PINU1	NUWO	3970	R	Snag, Woody Upper Canopy
Woodpecker, Pileated	<i>Dryocopus pileatus</i>	DRPI	PIWO	4050	R	Snag, Woody Upper Canopy
Woodpecker, Red-bellied	<i>Melanerpes carolinus</i>	MECA	RBWO	4090	R	Snag, Woody Upper Canopy
Woodpecker, Red-cockaded	<i>Picoides borealis</i>	PIBO	RCWO	3950	R	Woody Upper Canopy
Woodpecker, Red-headed	<i>Melanerpes erythrocephalus</i>	MEER	RHOW	4060	R	Snag, Woody Upper Canopy
Woodpecker, Strickland's	<i>Picoides stricklandi</i>	PIST	STWO	3980	R	Snag, Woody Upper Canopy
Woodpecker, Three-toed	<i>Picoides tridactylus</i>	PITR	TTWO	4010	R	Snag, Woody Lower Canopy
Woodpecker, White-headed	<i>Picoides albolarvatus</i>	PIAL	WHWO	3990	R	Snag, Woody Lower Canopy
Wren, Bewick's	<i>Thryomanes bewickii</i>	THBE	BEWR	7190	R	Woody Lower Canopy, Snag
Wren, Cactus	<i>Campylorhynchus brunneicapillus</i>	CABR	CACW	7130	R	Cactus, Woody Lower Canopy
Wren, Canyon	<i>Catherpes mexicanus</i>	CAME3	CANW	7170	R	Cliff
Wren, Carolina	<i>Thryothorus ludovicianus</i>	THLU	CARW	7180	R	Woody Lower Canopy, Snag
Wren, House	<i>Troglodytes aedon</i>	TRAE	HOWR	7210	A	Woody Lower Canopy, Snag
Wren, Marsh	<i>Cistothorus palustris</i>	CIPA	MAWR	7250	B	Reed
Wren, Sedge	<i>Cistothorus platensis</i>	CIPL	SEWR	7240	B	Ground
Wren, Winter	<i>Troglodytes troglodytes</i>	TRTR	WIWR	7220	R	Snag, Woody Lower Canopy
Wrentit	<i>Chamaea fasciata</i>	CHFA	WREN	7420	R	Shrub, Woody Lower Canopy

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
CARU2	Cup	Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest
BARU	Oven	Insects	Foliage, Air	Foliage Gleaner, Hawker	Shrubland, Forest
LISW	Cup	Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Swamp/Marsh, Riparian
VEPE	Cup	Insects, Fruit	Foliage	Foliage Gleaner	Swamp/Marsh, Forest Edge
DETO	Cup	Insects, Seeds	Foliage, Air	Foliage Gleaner, Hawker	Forest
VEVI	Cup	Insects	Ground, Air	Ground Gleaner, Hawker	Shrubland
WIPU	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hover Gleaner	Shrubland, Riparian
HEVE	Cup	Insects	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Riparian, Forest
DEPE1	Cup	Insects, Fruit	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Riparian, Shrubland
DECO	Cup	Insects, Fruit	Foliage, Air	Foliage Gleaner, Hawker	Forest
DEDO	Cup	Insects	Bark, Foliage	Bark Gleaner, Foliage Gleaner	Forest, Swamp/Marsh
SEMO	Cup	Aquatic Inverts, Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Riparian, Swamp/Marsh
SENO	Cup	Aquatic Inverts, Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Swamp/Marsh, Riparian
BOGA	Cup	Fruit, Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest, Forest Edge
BOCE	Cup	Fruit, Insects	Foliage, Air	Foliage Gleaner, Hawker	Forest, Forest Edge
OEOE	Crevise, Burrow	Insects, Seeds	Ground, Air	Ground Gleaner, Hawker	Tundra, Rocky Slope
NUPH	Scrape	Insects, Fruit	Ground, Water	Ground Gleaner, Prober	Swamp/Marsh, Tundra
CAVO	None	Insects	Air	Aerial Foraging	Forest
ANAM	Scrape	Greens, Aquatic Inverts	Water	Dabbler	Swamp/Marsh, Freshwater
ANPE	Scrape	Greens, Seeds	Water	Dabbler	Coastal, Pelagic
CASE	Scrape	Insects, Aquatic Inverts	Water	Prober	Coastal, Pelagic
SCMI	Scrape	Insects	Ground, Water	Prober	Swamp/Marsh, Riparian
MEFO	Cavity	Insects, Nuts	Bark, Air	Bark Gleaner, Bark Gleaner	Forest
PIAR	Cavity	Insects, Seeds	Bark	Bark Gleaner	Forest
PIPU	Cavity	Insects, Fruit	Bark	Bark Gleaner	Forest, Riparian
MEUR	Cavity	Insects, Fruit	Bark, Air	Bark Gleaner, Hawker	Desert, Urban
MEAU	Cavity	Insects, Nuts	Bark, Ground	Bark Gleaner, Ground Gleaner	Shrubland, Riparian
PIVI	Cavity	Insects	Bark	Bark Gleaner	Forest, Urban
CAPR	Cavity	Insects, Seeds	Bark, Ground	Bark Gleaner, Ground Gleaner	Swamp/Marsh, Riparian
PISC	Cavity	Insects, Fruit	Bark, Ground	Bark Gleaner, Ground Gleaner	Shrubland, Desert
MELE	Cavity	Insects, Nuts	Air, Ground	Hawker, Ground Gleaner	Forest, Riparian
PINU1	Cavity	Insects, Fruit	Bark, Air	Bark Gleaner, Hawker	Forest, Riparian
DRPI	Cavity	Insects, Fruit	Bark	Bark Gleaner	Forest, Urban
MECA	Cavity	Insects, Nuts	Bark, Air	Bark Gleaner, Hawker	Forest, Riparian
PIBO	Cavity	Insects, Fruit	Bark	Bark Gleaner	Forest
MEER	Cavity	Insects, Fruit	Air, Ground	Hawker, Swooper	Forest, Urban
PIST	Cavity	Insects, Fruit	Bark, Foliage	Bark Gleaner, Foliage Gleaner	Forest
PITR	Cavity	Insects, Tree Sap	Bark	Bark Gleaner	Forest, Riparian
PIAL	Cavity	Insects, Seeds	Bark, Ground	Bark Gleaner, Ground Gleaner	Forest
THBE	Cavity	Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Shrubland
CABR	Sphere	Insects, Small Verts	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Desert, Shrubland
CAME3	Crevise	Insects, Small Verts	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Rocky Slope, Urban
THLU	Cavity	Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Urban
TRAE	Cavity	Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Urban
CIPA	Sphere	Insects, Aquatic Inverts	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Swamp/Marsh
CIPL	Sphere	Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Swamp/Marsh
TRTR	Cavity	Insects	Ground, Foliage	Ground Gleaner, Foliage Gleaner	Forest, Riparian
CHFA	Cup	Insects, Fruit	Foliage, Bark	Foliage Gleaner, Bark Gleaner	Shrubland, Urban

COMMON NAME	SCIENTIFIC NAME	LCTA CODE	ALPHA CODE	AOU#	NEO STAT	NEST LOCATION
Yellowlegs, Greater	<i>Tringa melanoleuca</i>	TRME	GRYE	2540	R	Ground
Yellowlegs, Lesser	<i>Tringa flavipes</i>	TRFL	LEYE	2550	R	Ground
Yellowthroat, Common	<i>Geothlypis trichas</i>	GETR	COYE	6810	A	Shrub, Woody Lower Canopy
Yellowthroat, Gray-crowned	<i>Geothlypis poliocephala</i>	GEPO	GCOYE	6821	R	Ground

LCTA CODE	NEST TYPE	FOOD TYPE	FORAGING SUBSTRATE	FORAGING TECHNIQUE	GENERAL HABITAT
TRME	Scrape	Fish, Insects	Water	Prober	Coastal, Freshwater
TRFL	Scrape	Insects, Aquatic Inverts	Water, Ground	Prober, Ground Gleaner	Tundra
GETR	Cup	Insects, Seeds	Foliage, Air	Foliage Gleaner, Hover Gleaner	Forest Edge, Grassland
GEPO	Cup	Insects, Fruit	Foliage, Ground	Foliage Gleaner, Ground Gleaner	Forest Edge, Forest

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